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THE BOSTON
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Part First.

ORIGINAL COMMUNICATIONS.

Article I.—*A Case of Malignant Disease (Sarcoma) of the Lung.* By Thomas R. Fraser, M.D., F.R.S., F.R.C.P.E., Professor of Materia Medica and of Clinical Medicine in the University of Edinburgh.

(*Read before the Medico-Chirurgical Society of Edinburgh, 7th July* 1880.)

Since the publication of Dr Stokes's work on *Diseases of the Chest*, and of his later dissertation on the *Pathology and Diagnosis of Cancers of the Lung and Mediastinum*,[1] so many careful observations have been made and recorded on the subject of malignant disease of the lung, that it can no longer be asserted "that as yet almost nothing has been done in establishing the diagnosis of this disease."[2] Stokes himself has done much to define its symptoms, and his admirable discussions, along with those of Graves and Walshe, may justly be regarded as a trustworthy foundation on which the diagnosis may be built. The superstructure is, however, still far from complete. The diversity in the forms presented by the disease, and the relatively small number of cases that can be studied by any single observer, raise obstacles, which hitherto have not been surmounted, to the attainment of a complete definition of its symptoms.

Infrequent though the opportunities for observing malignant disease of the lungs may be, the records of hospitals and the pages of medical literature clearly show that its occurrence is not "too rare to be of much practical importance."[3] As Dr Risdon Bennett has judiciously observed in his valuable work on *Cancerous and other Intra-thoracic Growths*, "it is manifest that intra-thoracic cancer is of sufficiently frequent occurrence to render its natural history and diagnosis a study, not merely of curious interest, but of practical importance to the physician."[4]

The contribution to this clinical study which I am desirous to present to the Society this evening, in the form, unfortunately, of merely a single case in which the disease occurred as a primary affection, may serve to show how in some, no doubt exceptional, instances the existence of malignant infiltration of the lung may be clearly indicated by the physical signs and symptoms.

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[1] *The Dublin Journal of Medical Science*, vol. xxi., 1842, p. 206.

[2] *A Treatise on the Diagnosis and Treatment of Diseases of the Chest*, by Wm. Stokes, M.D., 1837, p. 370.

[3] Dr Williams, in Tweedie's *System of Practical Medicine*, vol. iii. p. 197.

[4] 1872, p. 3.

The case is that of a woman, Ellen Boyce, 39 years of age, who came under my care in the Royal Infirmary on the 4th of November 1879. Her father had been subject to asthma, and died of a "decline" when 30 years of age; and her mother died very suddenly after a "cold," which she is said to have caught the night before her death. Her parents had several children, of whom she is the only survivor, the others having died in infancy. She herself has had five children, of whom two are alive and in good health, while three died in infancy—one of whooping-cough, the second of measles, and the third from some unknown cause.

She had generally been able to obtain a sufficiency of good food. Recently she had indulged rather freely in alcohol. Some years ago her occupation had been that of a mill-worker in Glasgow, but latterly she had been a hawker, and in connexion with this occupation she had frequently been subjected to great fatigue and exposure. About twelve months before admission, for example, she caught a severe "cold" as a result of sleeping in the open air all night, and suffered for several weeks afterwards from pain in the left ear and left side of the neck. Fourteen years ago, she was treated in the Royal Infirmary for "flooding," from which she had also suffered after the birth of her first child. With these exceptions, she generally enjoyed good health until fifteen weeks before entering the hospital, when, without any antecedent that could be referred to as a cause, she began to experience pain at the right hip, extending down the front of the thigh, and this was soon followed by a pain at the extremity of the left shoulder. A month before admission, she also began to suffer from pain in the precordial region, accompanied with breathlessness, cough, and a copious expectoration, which is said to have been frequently tinged with blood. The continuance of these symptoms, with the addition of gradually increasing weakness, induced her to apply for admission into the Royal Infirmary.

When admitted, patient was seen to be of average height, somewhat spare, but fairly muscular, and with dark brown hair. She had a somewhat distressed and yet languid expression; and the skin was soft, rather lax, and tanned and marked with freckles over the face. Her temperature was normal, while the pulse was rapid. She stated that formerly she had weighed 13 stone, but recently had lost weight.

At the acromial end of the left clavicle a slight swelling was observed, which was hard, tender, and apparently attached to the bone, and the skin immediately over it was slightly red. No swelling could be detected at the seat of pain at the right hip, but pressure over the posterior aspect of the great trochanter produced much distress.

The respirations were rapid (32 to 40 in the minute), and the physical signs connected with the lungs were those of a moderate effusion into the posterior portion of the left pleural cavity, accompanied with bronchitic râles over the greater portion of the right lung and over the anterior portion of the left. Nothing else noteworthy was observed. The patient was accordingly treated with a cough mixture, and a large blister over the left lung behind.

Some days afterwards, a second blister was applied in the same position; and, partly owing to the necessity for waiting until the blistered surface had healed, a detailed examination was not made until the 14th of November. Before this date, however, the pain at the left shoulder and right hip frequently attracted attention. The situation and some of the characters of the latter pain suggested for it a neurotic origin, and on the 6th of November and one or two subsequent occasions hypodermic injections of morphia were made in its neighbourhood, with the effect of greatly relieving the suffering.

The nature of the swelling at the left shoulder was frequently discussed during the clinical visits. At first it was regarded as a periostitic enlargement, a view which had been adopted by one of my surgical colleagues whose opinion was invited. Soon, however, doubts began to be suggested as to the correctness of this explanation; for a few days after the admission of the patient another swelling, small and apparently glandular, was detected about an inch below the left clavicle, and from day to day it was observed to increase slowly in size. That these doubts, however, had not yet assumed a definite form is shown by the treatment on the 11th November having been the administration of iodide of potassium and the application of a blister over the left shoulder.

The condition on the 14th of November was as follows:—

14th November.—The general appearance of the patient had not undergone any material change. She had remained constantly in bed, and preferred to lie upon the right side. The temperature was normal, the pulse and respirations were frequent, and the skin was soft, but during the night cold sweats had been of regular occurrence. On the upper surface of the acromial end of the left clavicle there was a firm swelling attached to the bone, smooth on the upper surface, not adherent to the skin, and extremely tender. About an inch below the left clavicle, in the groove between the deltoid muscle and the clavicular portion of the pectoralis major, there was a small tumour, nearly as large as a hazel-nut, firm and mobile, and having a small hard projection at its outer extremity. About half an inch above the left clavicle, at the inner edge of the trapezius muscle, there was a similar tumour, of rather less size than that below the clavicle. No distinct enlargement could be discovered at the right hip, where severe pain and tenderness were present.

Respiratory System.—The patient had still a troublesome cough. The sputum was considerable in amount, frothy, and muco-purulent. Since admission the respirations had varied from 26 to 44 per minute, but there was no appearance of dyspnœa. The sternum was arched, and the chest slightly barrel-shaped. Some fulness was observed in the axillary and infra-axillary regions of the left side, and also at the left base behind. Over the upper portion of the front of the thorax, and especially near the sternum, the superficial veins were distinctly marked. On palpation, expansion was found to be nearly equal on both sides anteriorly. It was good posteriorly, on the right side and upper portion of the left side, but was almost absent at the left base. Vocal fremitus anteriorly was more marked in the right than in the left axillary region. Posteriorly, it was absent at the left base. The percussion-note anteriorly was clear on the right side. On the left side the note was hyper-resonant over the apex and as far down as the third rib. Posteriorly, the note was normal over the right side, but on the left side it was hyper-resonant from the apex to the spine of the scapula, below which it was dull to the base of the lung. On auscultation, it was found that anteriorly over the upper third of the right lung expiration was prolonged, and a few sibilant râles were occasionally heard, while over the lower two-thirds the breath-sounds were normal. On the left side, at the level of the second rib and about two inches from the sternum, vocal resonance was slightly ægophonic, and elsewhere at the apex bronchophonic. In the infra-clavicular region the breath-sounds were indistinct, and here, as well as over the greater part of this apex, coarse crepitations and occasional râles were audible. Posteriorly, on the right side the breath-sounds were normal, except at the base, where rhonchi were occasionally heard. On the left side the vocal resonance had an ægophonic character at the angle of the scapula, and lower down vesicular breathing was absent, but a few sibilant rhonchi were detected.

Circulation.—The patient had never suffered from palpitation, but she had frequently had pain at the precordia. The radial pulse was small, rather weak and frequent (80 to 96), and of equal volume and strength at the two wrists. There was pulsation in the episternal fossa and at the epigastrium. The apex-beat was indistinct. The area of cardiac dulness was normal, and the sounds were weak, but without any accompaniments.

Digestive System.—The teeth were good. The tongue was moist and pale, marked by furrows at the centre, and with a thick yellowish fur over the posterior portion. The patient suffered from thirst, and her appetite was poor; but there was no difficulty in swallowing, nor any uneasiness after the reception of food. The bowels were constipated, and since admission evacuations had occurred only after the administration of purgatives. The liver and spleen were normal, and there was no swelling nor tenderness in the abdomen.

Genito-urinary System.—At various times previously to her admission the patient had experienced pain on micturition, but she had not since her admission. The urine varied in quantity from 16 to 34 ounces in twenty-four hours. It was slightly acid, of an orange colour, free from albumen and sugar, and deposited urates pretty abundantly. Menstruation had been regular and normal. Since the patient's admission, however, there had been a period of six days.

Nervous System.—The patient was intelligent, and did not suffer from headache; but she complained of great weakness, and the pain at the shoulder and hip prevented her from sleeping well. Sight and hearing were not impaired; the pupils were equal, and reacted normally to light and during accommodation.

I have ventured to give this detailed account of the condition of the patient soon after her admission into the Infirmary, because it signalizes a stage in the history of the case of some interest when considered along with its subsequent progress. The symptoms which have been mentioned possess in themselves but little interest. They are of everyday occurrence; and, when observed in a patient whose occupation necessarily subjected her to frequent exposure to climatic influences, they justify the diagnosis of bronchitis, slight emphysema, and pleuritic effusion. The coexistence of any other disease within the thorax could not have been suggested by the physical signs or symptoms; nor could it have been inferred from the presence of the small tumours at the left shoulder, for their characters were quite consistent with the view that they were of a non-malignant nature, that the acromial swelling was merely a periosteal growth, and that the neighbouring and apparently glandular enlargements[1] were produced by irritation in their proximity. Although doubts were entertained, and although a final decision was reserved with regard to the nature of the tumours, it was considered advisable to continue the treatment which had already been commenced. A blister was again applied over the posterior portion of the left lung, the cough mixture and iodide of potassium were continued, morphia was occasionally injected under the skin to relieve the pain and produce sleep, and blisters were applied from time to time over the seat of pain at the shoulder and hip.

Under this treatment the condition of the patient steadily improved. The symptoms of bronchitis nearly disappeared, the area of dulness at the base of the left lung became considerably diminished, and the local pains became less urgent; until, shortly before Christmas, she had so far recovered as to be able to leave her bed for a few hours daily. In the second week of January, however, and without any apparent cause, her condition became worse, and she was again obliged to remain constantly in bed.

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[1] Jaccoud and others state that enlargement and induration of the cervical glands are very untrustworthy signs of intra-thoracic cancer.—*Traité de Pathologie Interne*, par S. Jaccoud, 1871, t. ii. p. 124.

17th January.—A careful examination was made on the 17th of January, when the following conditions were found to be present:—The patient had greatly deteriorated in her general condition. She was much emaciated, and had an anxious and wearied expression; while the tanned appearance of the face had disappeared and given place to a sallow colour.

The tumours at the left shoulder and above and below the left clavicle had increased in size. At the right hip there was a distinct oval projection about one inch in its long diameter, of firm consistence, and attached to and projecting from the posterior surface of the base of the great trochanter. On deep pressure in the left iliac region, a resistant indurated body was indistinctly felt; and the glands in both groins were enlarged and somewhat tender. Pain and tenderness at the middle of the right arm having recently been complained of, the situation of the pain was examined, and a hitherto undetected tumour was discovered at the inner aspect of the middle of the right humerus, about the size of half a walnut, attached to the bone, and extending a short distance beneath the inner edge of the biceps muscle. The tumours at the left acromion and right arm and hip were extremely painful and tender. The slightest pressure produced great suffering; and as it was impossible for the patient to turn either to the right or to the left side, or to sit up in bed, without pressing upon one or other of them, she lay constantly upon her back, and dreaded the slightest change of posture. For this reason the posterior region of the thorax could no longer be examined.

Respiratory System.—The respiratory movements were rather shallow and frequent; but besides this increase of frequency there was no evidence of dyspnœa. The cough and expectoration had diminished, and the latter was less frothy, but more opaque and purulent than before, while it was occasionally streaked with blood. The expansion of the right side of the thorax was rather greater than that of the left. The intercostal spaces were somewhat depressed; and extending from the sterno-costal extremities of the second rib on each side, downwards and outwards towards the mammæ, there was observed an enlarged vein which had undergone calcareous degeneration. Vocal fremitus was normal on the right side; it was absent over the whole of the left lung, except towards the outside of the subclavicular region, where it was faintly perceptible. A pulsation synchronous with the heart's movements was felt in the second and third left intercostal spaces, from the parasternal to nearly the anterior axillary line. The whole of the left side of the thorax was absolutely dull on percussion, communicating a marked sensation of resistance to the fingers. This dulness extended from the apex to the sixth rib, and was limited on the right side by a line extending down the middle of the sternum to the level of the third costal cartilage. To the right of this line the percussion-note abruptly became normal, and it was found to maintain a normal character over the right lung. The breath-sounds over the right lung were puerile, and occasionally accompanied with mucous râles. No vesicular breathing could be heard over the left lung, but loud and rough friction was heard with both inspiration and expiration. When the breathing was suspended, friction was also heard synchronously with the heart's movements, most distinct at the base of the heart, and nearly disappearing towards the apex. Vocal resonance was normal at the right side, but at the upper and lateral portions of the left side it had a distant bronchophonic character. Elsewhere on the left side it was almost absent.

Circulatory System.—The pulse continued to be rapid, small, easily compressible, and equal at the two wrists. On palpation, the apex-beat could not be distinguished, but there was marked pulsation at the epigastrium. It was impossible to define the upper and left lateral margins of the heart on account of the absolute dulness of the left thorax. The right margin, however, did not extend beyond quarter of an inch to the right of the sternum. With the exception of the friction-sounds already noted, the heart's sounds were normal, though weak.

Digestive System.—The tongue was less furred than formerly, the appetite was fairly good, and the bowels were still constipated. The abdomen was retracted, and dull on percussion, rendering it impossible to define the lower margin of the liver, but no irregularities could be detected on the surface of that organ, and its upper margin occupied a normal position. The spleen was not enlarged, and no tumours were discovered in the abdomen.

Genito-urinary System.—The urine was small in amount (18 to 20 ounces); it had a specific gravity of 1022, was alkaline in reaction, free from albumen and sugar, and on standing it deposited phosphates.

20th January 1880.—On the 20th of January the friction-sounds accompanying the heart's movements had disappeared, and the heart's sounds were feeble, but without accompaniments. Friction was, however, still heard on the left side; but it had a more restricted seat than formerly, and coincided only with the respiratory movements. At the upper margin of the fourth rib it was heard from the flank to one inch and a half from the sternum, and in the third interspace only from the mammary line to the axilla; and in both situations it was loud and rough, and accompanied expiration as well as inspiration. In the second interspace, however, it was heard with expiration alone, and here weak bronchial breathing was occasionally audible. Distant bronchial breathing could also be heard in the supra-clavicular and upper lateral portions of the left side. Elsewhere on this side no breath-sounds could be detected. Vocal fremitus was still absent in the left side, except in the infra-clavicular region, where it was indistinctly perceptible.

22d January 1880.—On the 22d of January, friction could not be detected anywhere at the left side, but vocal fremitus could now be distinctly felt over the greater portion of that side. There was still absolute dulness over the whole of the left lung, strictly defined, as before, above the third cartilage, by a line passing down the middle of the sternum. There appeared also to be shrinking of the left side, and during inspiration no expansion of the left side could be observed, the only movement being a dragging of it towards the right side, the movements of the latter being exaggerated. It was extremely difficult to verify these observations by measuring the chest, on account of the pain which attended every change of posture. The following measurements, however, were made with as much accuracy as the circumstances permitted:—The semi-circumference at the level of the third rib, from the dorsal vertebra to the midsternum, during ordinary respiration, on the right side varied between 15 and 15⅜ inches, and on the left side remained without almost any variation at 15⅛ inches; during full inspiration, the right and left sides each measured 15⅜ inches; and during full expiration, the right side measured 14⅝, and the left side 14⅞ inches. The left side, especially over its upper portion, was now extremely sensitive, rendering the physical examination somewhat difficult, as the slightest pressure by the stethoscope or fingers caused pain.

The tumours at the left shoulder had increased in size and become much discoloured. This was conspicuously the case with the tumour over the acromion, where the skin had assumed a purple colour from enlargement of the superficial veins and capillaries, which pursued a radiating course from the summit to the base of the tumours. The consistence of this tumour was not so uniformily firm as previously; and as a portion of its base was softer than the rest, the needle of a hypodermic syringe was inserted into it and the syringe used as an aspirator. By this means a small quantity of a gray caseous substance was obtained, which on microscopic examination was seen to consist of red blood-corpuscles, leucocytes, and rounded nucleated cells.

As the symptoms which were observed between the 17th and 22d of January may be said to represent the second stage in our observation of the progress of this case, it may be convenient to interrupt the narrative at this point in order to consider their significance. They show that a remarkable change had occurred in the condition of the patient. In the first stage, the lung symptoms were only sufficient to warrant the diagnosis of the comparatively unimportant complication of a limited pleuritic effusion accompanying bronchitis and slight emphysema — a diagnosis that could scarcely have been modified by the existence of pain at the right hip, and of slight swelling at the extremity of the left clavicle and in one or two neighbouring lymphatic glands. In the second stage, however, new symptoms and conditions made their appearance, in connexion both with the lungs and the external swellings, which rendered the diagnosis of the then existing lung disease and of the nature of the external swellings only too evident. So satisfied was I of this, that on the 23rd of January the case was adopted as the basis of a clinical lecture on malignant disease of the lungs; and although it had occurred to myself, and was more than once represented to me by my able clinical assistant, Dr Strang, that it might be prudent, before definitely adopting a diagnosis, to make an exploratory puncture into the left thorax, I refrained from doing so, for the reason that, in what appeared to be so clear a case, it was unnecessary to subject the patient to the annoyance of even this trivial operation.

From the notes of this lecture I find that in it I based the diagnosis upon negative and positive grounds. The negative were those which excluded possible explanations of the symptoms other than the explanation which was adopted, and especially consolidation of the left lung resulting from pneumonia, phthisis, or cirrhosis, or the existence of aneurism or of effusion into the left pleura.

Let me very briefly state the reasons which appeared to justify the exclusion of these pathological conditions.

Pneumonia seemed to be readily excluded by the absence of pyrexia, of characteristic sputa, of tubular breathing or crepitations, and of disappearance from the urine of chlorides during a period extending from the 17th to the 22d of January, although at the former date the whole of the left lung was dull on percussion, and by the fact that the vocal fremitus disappeared and again reappeared over extensive portions of a lung which constantly remained dull on percussion.

Phthisical consolidation was excluded by the absence of characteristic sputa and of temperature variations, by the restriction of so extensive a consolidation to one lung, by the absence of any evidence of cavity or of breaking down of the consolidated structure, and by the existence of constipation in place of diarrhœa.

The exclusion of cirrhosis or chronic interstitial pneumonia was mainly based upon the absence of any signs of contraction of the lung or of the results of contraction, notwithstanding a rapidly advancing emaciation and a consolidation of the entire lung which had lasted for some time.

Thoracic aneurism cannot be said to have raised any difficulty in the diagnosis. The absolute dulness was too extensive and too strictly defined by the sternal mesial line at the upper part of the thorax to admit of such an explanation, while the pulsations which were observed in the interspaces[1] were not only too indistinct to be caused by an aneurism of large size, but were unaccompanied by bulging at the seat of pulsation. Besides, no murmurs were audible there nor over the larger bloodvessels, the second sound of the heart was not unduly prominent in the aortic area, the pupils and two radial pulses were equal, the coats of the bloodvessels were not atheromtous, and there was no dysphagia nor laryngeal stridor.

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[1] Dr Stokes states that extensive pulsation of the lung occurring in a chronic case "has only been observed in cancer" (*The Dublin Journal of*

The exclusion of extensive pleuritic effusion was perhaps alone attended with some slight difficulty. This difficulty existed only during the earlier portion of this stage; but it cannot be said to have caused much doubt as to the diagnosis, while it lent an additional interest to the case when the resemblance to and distinctions from effusion came to be considered. On the 17th of January, the left side of the thorax was absolutely dull on percussion, vocal fremitus was absent over the greater part of the dull area, no breath-sounds could be detected, and the vocal resonance had a distant bronchoponic character at the upper and lateral portions of this side. These signs, no doubt, harmonized with pleuritic effusion, and some further support was perhaps given to the supposition of the existence of effusion by there having been unmistakable evidence of that condition at the posterior base of the left lung, during the first stage of our observation of the case. It was found, however, that at the same time loud friction-sounds accompanied the respiratory movements, that the intercostal spaces were depressed, that the dulness was strictly confined to the normal limits of the left pleura, and that the heart was not displaced. It was possible, therefore, on the first day in which the dulness was observed, to feel assured that is was not caused by effusion into the pleura; and subsequent observations accorded thoroughly with this assurance, for four days afterwards, when the friction disappeared, vocal fremitus reappeared over a considerable portion of the still absolutely dull lung.

The positive grounds for the diagnosis of infiltrated malignant disease of the left lung were, mainly, the existence in a patient 39 years of age of symptoms indicating a solid mass in the left thorax, which had rapidly occupied the whole, or nearly the whole, of the space enclosed within the left pleura, without producing pyrexia, dyspnœa, pressure symptoms, much pain, or distinct alteration in the size of the left thorax or in the position of adjoining viscera, and which was attended with emaciation, cutaneous hyperæsthesia, and certain constant and varying physical signs that were not explainable by the existence of any cause of solidification except an extensive interstitial deposit of new substance.

Medical Science, vol. xxi., 1842, p. 233). Diffused pulsation is also referred to as a symptom of intra-thoracic cancer by Dr John John Cockle (*On Intrathoracic Cancer*, 1865, p. 93); Dr Walshe (*A Practical Treatise on the Diseases of the Lungs*, 4th ed., 1871, p. 521); and Dr Van Gieson (*The New York Medical Journal*, vol. xxx., 1879, p. 516).

I am inclined to think that these negative and positive characters were of themselves sufficient to establish the diagnosis of malignant disease of the lung. As a matter of fact, the diagnosis of the intra-thoracic condition was at this stage of the case founded upon them, for the nature of the subcutaneous swellings remained doubtful until after the very remarkable symptoms connected with the left lung had fully developed themselves. At the same time, the existence of external swellings undoubtedly gave a certainty to the diagnosis which it might not have possessed had they been absent.

(*To be continued.*)

ARTICLE II.—*Location and Administration of Special and General Hospitals in which Contagious Diseases are Received.* By Sir JOHN ROSE CORMACK, M.D. Edin.; M.D. Paris; Fellow of the Royal College of Physicians of London; Member of the Société Clinique of Paris; Physician to the Hertford British Hospital of Paris; Chevalier de la Légion d'Honneur.

(*Read before the Social Science Congress at Edinburgh, 9th October* 1880; *some paragraphs added in December.*)

THE Origin of Epidemics and the Spread of Contagious Diseases can so frequently be traced to noxious or defective arrangements in the social life of the communities which suffer from them, that the belief is becoming more and more general, both with the public and the medical profession, that they may sooner or later, to a great extent, be prevented by the rigid enforcement of precautionary measures, framed in accordance with increasing knowledge.

SMALLPOX.

Smallpox, one of the principal diseases to be now considered, particularly illustrates this statement, which is, however, general in its application. It applies equally to other maladies propagated in a manner quite different from smallpox.

The late Sir James Y. Simpson, in his well-known essay entitled, *Proposal to Stamp Out Smallpox and other Contagious Diseases*, suggests measures which, he says, "would probably stamp out smallpox in Great Britain within six months or a year, provided they were carried out as faithfully and universally as the Legislature can command"; and he adds, "If the extirpation of the disease were thus once effected, any fatal case or cases of the return of the malady to any seaport, city, town, village, or country district would be speedily notified by a machinery already in full operation, viz., the registration of deaths; and all the requisite powers for stamping out the disease in the newly-infected locality could at once be set in full operation." Isolation, as Sir James Y. Simpson stated, is unquestionably "the chief and leading measure required to stamp out smallpox;" but Sir James Simpson evidently was not aware of the extreme difficulty of carrying out a system of isolation in large cities. He and subsequent writers have not taken into account the fact, that the winds may waft the pestilence to considerable distances. The four regulations which Sir James Y. Simpson proposes are to the following effect:—

"*First*, The earliest possible notification of the disease after it has once broken out upon any individual or individuals.

"*Second*, The seclusion, at home or in hospital, of those affected, during the whole course of the disease, as well as during the convalescence from it, or until all power of infecting others is past.

"*Third*, The surrounding of the sick with nurses and attendants who are themselves non-conductors, or incapable of being affected, inasmuch as they are known to be protected against the disease by having already passed through cowpox or smallpox.

"*Fourth*, The due purification, during and after the disease, by water, chlorine, carbolic acid, sulphurous acid, etc., of the rooms, beds, clothes, etc., used by the sick and their attendants, and the disinfection of their own persons."

An efficiently vaccinated community is, to a very large extent, a community protected from the contagion of smallpox; and vaccinated persons, when they take smallpox, generally take it in a mild and modified form. But how to secure efficient vaccination for a community is still an imperfectly solved problem. Persons stricken with smallpox propagate it by intercourse with unprotected individuals, who are, and perhaps must always be, a considerable section of the general population. It is necessary, therefore, to "isolate" cases of smallpox, to prevent the spread of the disease. But is efficient isolation practicable? Or rather—to put the question in a practical form—How are we to reduce to a minimum the danger incurred by the general population from contact with, or contiguity to, persons having smallpox? Are we to isolate them by collecting them in special hospitals, or in special wards reserved for their reception in general hospitals? If isolation in appointed places be deemed essential, under what conditions ought the system to be worked, so as to prevent the centres of isolation becoming centres of propagation, as they have been in Paris during the present epidemic?

Before answering these questions categorically, it is necessary to state a certain number of facts upon which the answers rest. An outbreak of smallpox which occurred in the early months of 1879 in a building in the Route de la Révolte, Neuilly, then used as the temporary Hertford British Hospital, furnishes a small, but not uninstructive, group of facts bearing on the subject. On the 15th January 1879, John Claridge, a blacksmith, aged 48, was admitted on account of a severe injury he had sustained in shoeing

a horse. At the evening visit of the same day, a red rash was observed, and his temperature was 39° C. Next morning, a red papular elevated eruption was felt under the skin. On the third day, numerous pustules declared the case to be one of smallpox; and all the patients in the ward who were able to leave were invited to do so. Four only remained, all of whom took smallpox, and two of whom died, viz. F. Martin, stableman, aged 33, on 3d February; and three days later, John Shankland, coachman, aged 34. One of the two who recovered was Edward Norman, coachman, aged 26, a consumptive patient, who had three good vaccine marks on one arm. The other was Jem Cleasy, a coachman, aged 39, who had been admitted on account of a fracture of the leg. This man had had smallpox some years previously, and his face was deeply scarred and pitted by the attack. In both of these men, and in John Claridge, the disease was comparatively mild. Eight female patients remained, all of whom escaped. Two members of the staff took the disease, one of whom, Nurse Young, died on the 6th February, after an illness of six days. The eruption was confluent; and the case was of the worst type. The other was Morris, the cook, whose attack was mild. Neither of them came in contact with the stricken patients. Nurse Young was much afraid of the disease; and kept carefully from the infected persons. She had a dread of the disease; and yet obstinately objected to be vaccinated before the outbreak, and also when the smallpox declared itself. Morris had good vaccination marks. The outbreak was all over within a month from the admission of Claridge. Out of six who were attacked, three died. That Young, the nurse, who died, and Morris, the cook, who recovered—persons who had never seen or touched any of the smallpox patients, had never come in contact with their fomites, had never entered the ward in which they were treated—should have been stricken is a noteworthy fact, particularly as the women in the upstairs rooms—nurses and patients—and likewise all those in attendance on, or in communication with, the smallpox cases escaped. It may be assumed that the persons who were in attendance upon the smallpox cases had been efficiently vaccinated, and that the persons who were living upstairs escaped, either from the same cause, or because morbific emanations from the patients did not reach them. Be that as it may, in Young and in Morris the morbific germs found a soil, so to speak, suited to their germination and development. Of the thousands and tens of thousands who daily inhale and swallow morbid poisons, only a very limited minority present a soil adapted to the reproduction of the parent disease, be that parent smallpox, scarlatina, diphtheria, measles, typhoid fever, cholera, or other malady. The present question is, How, and in what form, did Young and Morris receive the contagium? The medium of reception was most probably the air. Several times a day, they had to pass along a corridor, which (to command a thorough ventilation in adapting the building for use as a temporary hospital) was cut off from the length of the ward by a partition extending only two-thirds of the height from the floor. Large windows opened from without directly into this corridor; they were exactly opposite other large windows within the ward —that is to say, at its other end. When these opposite windows were open—which they generally were more or less—a considerable current of air swept into the corridor from the ward. I may add, that I have perceived a strong eddying current in this corridor when a door at its extremity was open. Young and Morris passed through this corridor several times daily, and in their passage must have inhaled and swallowed poison-charged epithelial scales blowing from the ward upon their faces. That such was the manner in which the two persons in question received the morbific germs is highly probable.

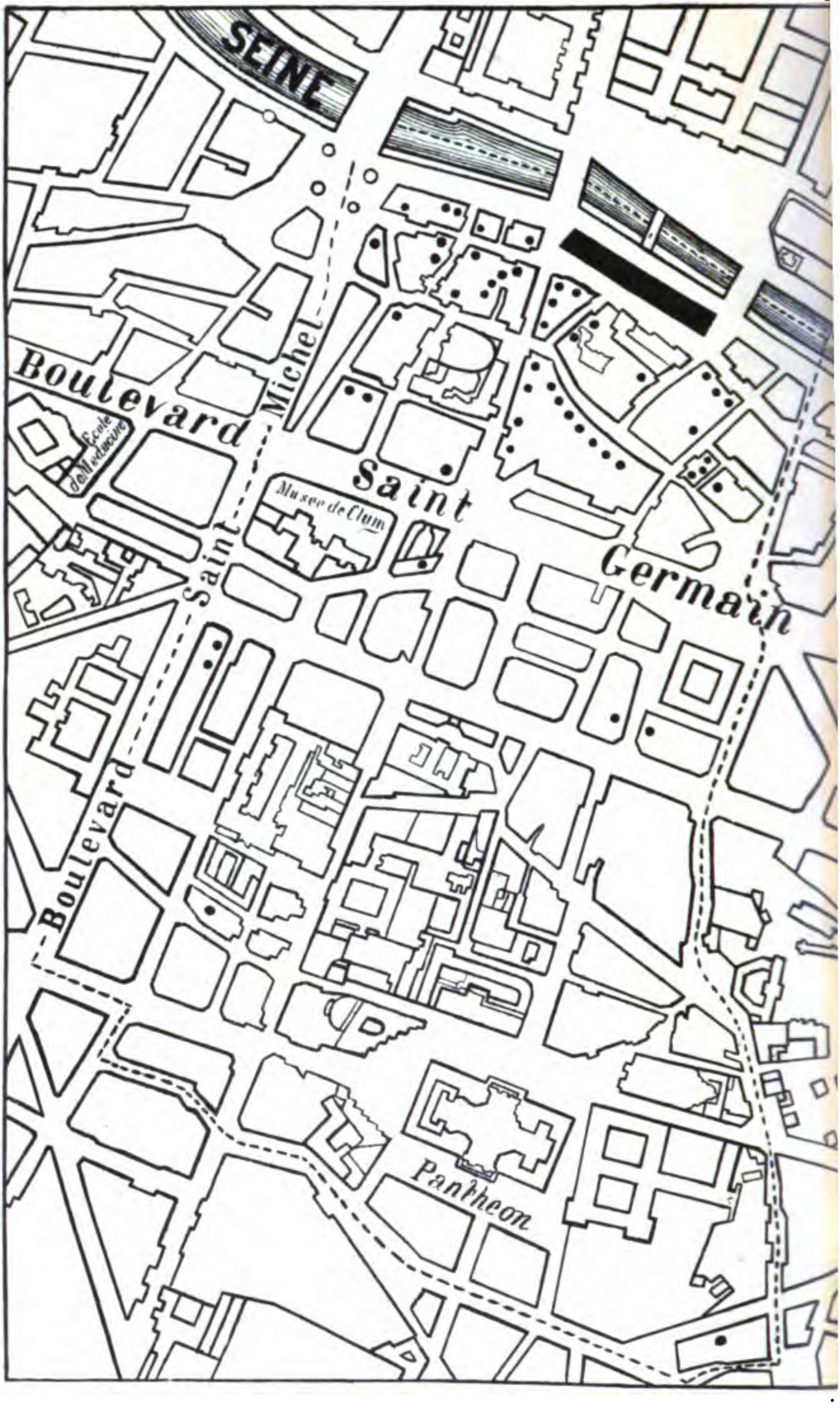
The explanation is confirmed by an interesting little history narrated by the late Dr Trousseau of Paris in his Clinical Lectures. Arguing, in his lecture on contagion, against the opinion that smallpox may originate "spontaneously," he maintains that the alleged cases of spontaneous origin are cases in which the source of the contagion could not be traced; a difficulty which, as he remarks, is much greater in towns than in rural districts. He then goes on to say:—

"Even in Paris, however, we sometimes have an opportunity of tracing back the contagion to its source. In 1827, I attended, in the Rue de l'Exchiquier, a young woman with smallpox. She lived with her mother, a poor linendraper. Both women inhabited the ground floor, which consisted of one room divided by a high screen. The division next the street was the shop; in the compartment behind the screen was the one bed in which mother and daughter slept. During the entire duration of the case of smallpox, the neighbours came as of wont to make their purchases; and none of them had any suspicion of the danger which they thus incurred. At that time I lived in the Rue de l'Exchiquier, and so was enabled to watch carefully the development of a perfectly local little epidemic. In less than six weeks, seventeen of the patient's neighbours were attacked by smallpox; and I ascertained from the mother that the persons first seized in each family were persons who had come to make purchases at her shop. As no one knew how the disease had spread, the different medical men who were called in remained convinced that it had been spontaneously developed."

The facts now stated show that, at least within a certain area of contiguity, smallpox is conveyed from person to person by atmospheric agency; and they likewise suggest that the diffusion of the disease by currents of air charged with the morbific desquamated epithelium must be much more common than is generally sup-

ARRONDISSEMENT OF THE SORBONNE.

[The black parallelogram is the "Annexe."]



posed. They consequently proclaim the necessity of adopting measures to prevent the atmospheric distribution of the germs, and suggest the importance of ascertaining the extent of the danger-area which surrounds a smallpox patient.

I had long wondered whether it were possible to devise any method for ascertaining absolutely or approximatively how far from the centre of contagion the morbifically charged epithelial scales and scab-dust may be wafted, when my attention was accidentally directed to a communication by Dr Bertillon of Paris in the number for March 1880 of the *Annales de Démographie Internationale*, on the diffusion of diseases in the vicinity of hospitals. Dr Bertillon is Professor of Demography in the School of Anthropology, and took office on the 1st January of the current year as Director of the Statistical Department of the Municipality of Paris—a department which at that date was placed upon an admirable and entirely new basis.

In the paper to which I refer, Dr Bertillon takes as his starting-point the fact that the weekly mortuary statistics published in January and February by the Municipality of Paris showed that, in the smallpox epidemic which then prevailed, certain *arrondissements* of the city were conspicuous for the constancy with which they were stricken, and that the *arrondissement* of the Sorbonne suffered more than any other. This and other cognate facts, he skilfully weighs in all their bearings.

In January and February, there were 569 deaths from smallpox in all Paris, 57 of which occurred in the Sorbonne *arrondissement*. That *arrondissement* contains about 32,000 inhabitants, which is one-62d part (1-62·5) of the entire population of Paris; so that its proportion of smallpox deaths ought to have been one-62d part (1-62·5) of 569—viz., 9 deaths—whereas it gave 57 deaths, which is from six to seven times as many. The numbers for January and February, taken separately, give almost the same proportionate results. The constancy of the excess of smallpox deaths in the Sorbonne *arrondissement* during the two months reported on had obviously a cause equally constant. With a view to discover this cause, Dr Bertillon tabulated the smallpox deaths of the *arrondissement* according to the streets and houses in which the deceased were residing at the time of seizure. This proceeding showed that the deaths from smallpox, in place of being pretty regularly distributed throughout the *arrondissement*, were grouped within a space hardly equal to one-fourth of it. The portion in question, as is seen by the accompanying map, lies between the bank of the Seine, which forms the north-east boundary of the *arrondissement*, and the Boulevard Saint Germain. The population of this portion of the *arrondissement* of the Sorbonne, in which the houses are much crowded, may be estimated at from 10,000 to 11,000, which is a little more than one-200th part of the entire population of Paris. The proportion of deaths within that area from smallpox ought, therefore, to have been a little more than one-200th of 569, the total smallpox mortality of the city—viz., 2·84, or about three deaths; whereas the actual number of deaths was 49, or more than sixteen times the proportionate number. Dr Bertillon naturally concluded that, whatever was the cause of the localised excessive mortality, the cause was limited within the small locality. He had reached this point in his inquiry, when Dr Farrabout informed him that there was a depôt of smallpox patients in the building called an "annexe" of the Hôtel Dieu, which he suggested might explain the excessive smallpox mortality in the circumjacent streets. Dr Bertillon, on pursuing his investigation, was soon convinced that the variolous contagion radiated, so to speak, from the depôt of smallpox patients in the annexe. He moreover discovered that in one long street—the Rue Galande—having a range of houses with some of the windows opening opposite the annexe, and some opening on the other aspect, the deaths from smallpox occurred only in the houses which had windows facing the annexe. The houses in which fatal smallpox cases originated are indicated by black dots on the accompanying map. It appears, then, that the depôt of smallpox patients in question was really the cause of forty deaths from smallpox in a little corner of Paris—the cause, likewise, of course, of a large unascertainable number of non-fatal cases within the same area; and also a cause contributing to keep up the epidemic throughout Paris by spreading contagion from person to person. The facts now stated show that the annexe was a deadly centre whence smallpox was diffused by atmospheric currents; from it the inodorous and invisible poison was wafted by the then prevailing north-eastern wind.

The little locality between the Seine and the Boulevard Saint Germain was not only well placed to receive the disease by the wind blowing from the annexe, but was also a locality specially adapted for the breeding and spread of any contagious disease introduced into it. The depôt contained at an average 140 patients crammed into horrible wards. It is a lofty four-story building overlooking the neighbourhood. The circumjacent dwellings are old, ruinous, and filthy, piled one above another, and very sparingly supplied with air and light, affording the very best conditions for receiving and retaining on their grimy walls the drift of variolous dust from the annexe. These wretched old houses are crowded by correspondingly wretched-like inhabitants—a dirty people, in rags, lean and wan. On visiting this locality to examine its topography and characteristics, I had vividly recalled to my recollection localities in the Old Town of Edinburgh with which I first became acquainted more than forty years ago as a dispensary pupil. In the Old Town of Edinburgh, at the date referred to, typhus was endemic; and it and other fevers were epidemic at short intervals. These fevers seldom showed themselves, and never took root in the New Town, which, from its open, straight streets and exposed situations, was constantly being swept by the high winds for which Edinburgh is famous, but which could not sweep through the then existing fever-dens of the Old Town—the narrow lanes (closes) inhabited by a poor population, crowded into gigantic houses (lands) of from ten to fourteen storeys, into which air and light only found indirect and imperfect admission. By well-directed demolitions and the construction of new streets, carried out by the municipality, the horrible fever-dens of my early days have been destroyed, and wind as well as air and light in abundance have been freely admitted to the Old Town, with a very striking diminution in the ordinary average number of fever cases, and the non-occurrence of a fever epidemic for many years. In the Old Town of Edinburgh, the places so appropriately named fever-dens were always found to be the favourite breeding-beds alike of typhus, relapsing fever, and cholera, showing clearly that the same insanitary conditions determined the headquarters of epidemics of specifically different diseases.[1] It must, therefore, be borne in mind

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[1] Professor Sir Robert Christison, in the valuable "Address on Public Health" which he delivered at the meeting of the Social Science Association held at Edinburgh in 1863, in mentioning the remarkable decrease in typhus which had occurred during recent years in Edinburgh, dissents from the opinion that the decrease is attributable to the city improvements, because it had begun before the improvements were made. He says (p. 18) :—

"About the period of this decrease, the drainage of that part of the city where the chief nests of fever always lay was improved. But the decrease began decidedly before the commencement of that reform. I am informed by our superintendent of drainage, that the works for improved drainage of the worst part of the city—the Grassmarket, Cowgate, Canongate, High Street, and the closes communicating with these—were only begun in 1854, were far advanced only in 1858, and are now all but finished. Neither can the rapid decrease of fever be ascribed to any satisfactory improvement in the cleaning of the lanes and houses of the working classes. I believe that long prior to the decrease our police had done as much for the cleansing of the fever districts as the impracticable structure of the streets or lanes there, and the incorrigible habits of their occupants, would allow. And as for the home-habits of these people, no such improvement of them has taken place in my time as will explain any other change of circumstances in their social economy.

"Here, then, is a discovery which remains to be made in social science. Why is it that typhus, which had been almost a perpetual pestilence in Edinburgh for a third of a century, has been of late wearing itself out, and last year almost flattering us with its extinction? The cause has certainly not yet been discovered. My own strong impression is, that the secret will be found to be connected with the theory which has been much canvassed in the present day, the successive changes of type or constitution of epidemic diseases. But as this is a favourite theory of my own, I shall not here insist on it further than by warning all inquirers into the origin of zymotic diseases in foul miasms, that they run great risk of ascribing to these, and the removal of these, fluctuations in the prevalence of such diseases which are often far more probably owing to a more recondite cause—a change in epidemic constitution. In the meantime, the experience of the physicians of Edinburgh presents us with the precept, also derived from the experience of other great towns, that the smallpox germs wafted to the locality in the *arrondissement* of the Sorbonne fell on a soil where all the conditions were favourable for their development and spread. This fact has to be weighed in estimating the effect of the relation of the annexe to the smallpox mortality of its vicinity. It does not, however, invalidate the conclusion that the annexe was the great centre of the contagion; for when it was closed, the proportion of smallpox deaths diminished in the locality between the Seine and the Boulevard Saint Germain, and was very soon no higher than in other parts of Paris.

Besides the annexe of the Hôtel Dieu, there were in Paris three other depôts of smallpox patients—the Hôpital Saint Antoine, the Hôpital Eugénie, and the Hôpital Laennec. The Hôpital Saint-Antoine and the Hôpital Eugénie are both in the same *arrondissement*, which bears the name of the *Quinze Vingts*. The former, next to the annexe of the Hôtel Dieu, was the most important depôt of smallpox patients; and the latter has a sad celebrity on account of its special wards for diphtheria, where lately M. Herbelin, the interne, died from that disease, the contagion of which he received in the incautious performance of his duties. The deaths both from smallpox and diphtheria were found, on scrutiny by Dr Bertillon, to be almost indifferently distributed over all of the Quinze Vingts

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though, perhaps, nowhere else so categorically, that typhus never can prevail in the epidemic form in face of employment for the working classes and ventilation of their dwellings."

In respect to Sir Robert's remarks, it must be remembered, that after severe epidemics there is always, and of necessity, a decrease for a long period in the ravages of the disease which has prevailed as an epidemic—simply because the persons susceptible to the morbific influence have been weeded away. Had the demolitions not taken place, it seems highly probably that an epidemic must, in the ordinary course of events, have ere now occurred in the Old Town of Edinburgh. The point raised by Sir Robert Christison does not much affect the reasoning in the text; but it involves an interesting cognate question. For that reason, I subjoin the following extract of a letter from Sir Robert Christison, dated 11th October 1880, in reference to the remarks in the text which he had heard me read (and honoured me by critising) three days previously in the Health Section of the Social Science Congress:—"You will see that fever ceased to be epidemic not later than 1854. The destruction of wynds and closes did not begin till after the 'Improvement Act' of 1867; and it was several years later, of course, before any material improvement was effected. There has been no epidemic since, except a limited one, a few years ago, among the boys of the 'Industrial Brigade,' whose chief occupation was that of blacking shoes in the streets. They were said to be poorly fed. The fever, as usual in such circumstances, was inflammatory (or relapsing) fever. It began to pass to adults; but it was soon stamped out by energetic measures. You will see that the disappearance of fever in the epidemic form was not connected with the city improvements; nor have I any confident opinion as to the real cause—while, at the same time, it is true that there has been no recurrence since 1848–49 of that want of employment, and the consequent distress among the labouring classes, with which all fever epidemics have been observed to be associated."

arrondissement. This, Dr Bertillon thinks, is explained in respect to smallpox by there having been two centres of contagion in place of one—the hospitals of Saint-Antoine and Sainte-Eugénie. The Quinze Vingts *arrondissement* contains about 44,000 inhabitants, or about one-45th (45·4) of the total population of Paris; it ought, therefore, not to furnish more than one-45th of the deaths from smallpox—that is to say, from 12 to 13—whereas it gave 33 deaths from smallpox, nearly three times as many. It appears, then, that during the two months in question, in the *arrondissement* of the Quinze Vingts, the mortality from smallpox exceeded that proportionate mortality of all Paris from 20 to 21 times. The mode of diffusion was probably to a large extent, however, by direct personal communication, a circumstance which prevents an estimate being formed of the extent to which epithelial drift disseminated the disease. Saint-Antoine and Sainte-Eugénie are large general hospitals, to which crowds of out-patients daily repair, and it was by them unquestionably that smallpox was chiefly propagated, and is still being propagated in the vicinity of these two hospitals. Here, in passing, I may remark that the out-patients' waiting-room at Sainte-Eugénie has the repute of being a centre whence diphtheria is diffused among the children frequenting it. To a large extent, I doubt not, the spread might be checked by suppressing the out-patient department, and preventing, by strict police supervision, all intercourse between the outside population and the smallpox wards. The increased smallpox mortality, then, in the neighbourhood of Saint-Antoine and Sainte-Eugénie, while it shows that depôts of smallpox patients are dangerous to those living in proximity to them, does not show that the danger is one which cannot be much mitigated. I admit that at once; but I hold that it is a danger which no police system can entirely remove. The history of the spread of the disease in the vicinity of the annexe of the Hôtel Dieu is the history of *spread by epithelial drift,* so to speak, which no system of police can intercept. It is, I maintain, a history which proves that a depôt of smallpox patients must always be a source of some danger to the inhabitants of the vicinity; and also, that the only means of lessening the danger is by keeping the desquamation as much as possible out of the moving air. This may be accomplished to a considerable extent by preventing its leaving the patient in a dry state, or by destroying it on the premises.

This remark derives great interest and importance from the short account which I now proceed to give of the fourth depôt of smallpox patients spoken of by Dr Bertillon in his statistical report—that of the Hôpital Laennec, in the Rue de Sèvres, which is one of the dirtiest hospitals in Paris. In that hospital, during the two months, there were special wards in which from 30 to 40 smallpox cases were collected—a number which, though very much less than the number in the annexe of the

Hôtel Dieu, was still considerable. Dr Bertillon found that no excess of smallpox deaths had occurred in the vicinity of the Laennec. It is to be regretted that there is no way of ascertaining, as in Edinburgh, the number of non-fatal cases. Dr Bertillon does not pretend to give a satisfactory account of this relative immunity from fatal cases; but specifies causes which probably co-operated in producing it. First, the buildings inhabited by the smallpox patients do not overlook the neighbouring houses, as in the case of the annexe. Secondly, the windows which look towards it are few in number, and only look upon the garden of the hospital, not upon the wards containing the smallpox patients. In the third place, it had been the custom in the Hôpital Laennec for the ward servants to throw at once into the fire the floor-sweepings of the smallpox wards—not because they had been ordered to do so, but because it was the most convenient method of getting rid of them. This was not done in the other smallpox depôts; on the contrary, the dust of the floors, necessarily rich in poison-charged squamæ, was collected in the dust-bin placed in a corner of the garden, where it was again shaken up before being consigned to the scavenger's waggon. Finally, the houses in the district are of a good class, and unquestionably inhabited by a better vaccinated community. I am inclined to attach a capital importance to the very different treatment pursued in respect of the sweepings in the different depôts. The dust-burning is a simple proceeding, commending itself to common sense. It is a sure means of largely destroying the aerial circulating power of the virus. If the ward-sweepings be carefully burnt within the smallpox wards, there will be very much less chance of a poison-charged drift of epithelial scales spreading smallpox in the outside vicinity.

The teaching of the facts now stated is of paramount social importance, and ought not to be blinked because it is uncomfortably at variance with the views of leaders of opinion on questions of public health. The teaching is to the effect that depôts of smallpox patients cannot be divested of all danger to the surrounding population by preventing intercommunication of the persons outside and inside the depôts; inasmuch as the germs of the disease are liable to be carried to a considerable distance by a poison-charged epithelial drift. Possibly, if the patients in the annexe had been diligently smeared with oil, and the ward-sweepings had been regularly burnt at short intervals, there might have been no spread of smallpox by the wind. But still, the conclusion would remain unshaken, that depôts of smallpox patients are dangerous to the surrounding population, particularly in crowded neighbourhoods, safety being contingent upon the minute, constant, and conscientious discharge of irksome duties by nurses and ward-servants. This uncomfortable lesson proclaims that we require to consider well where we locate, and how we administer, hospitals or wards specially reserved for smallpox patients; but it does not show that it is a heresy in preventive medicine to isolate smallpox patients in depôts.

The arrangement of numerous details must necessarily vary in each depôt according to the circumstances; but the principles which have to be borne in mind admit of being distinctly stated. The chief points to be attended to are embraced in the following propositions:—

1. Smallpox patients ought not to be isolated in depôts situated in or near dirty, crowded, closely-built districts; nor contiguous to an imperfectly vaccinated community.
2. Smallpox patients ought to be isolated in special hospitals in which only smallpox patients are received. They ought neither to be received into general hospitals, nor into hospitals reserved for contagious diseases, however carefully a system of separation may be carried out.
3. Measures must be taken to prevent epithelial drift issuing from the depôts of smallpox patients, viz., frequent inunction of the patients when desquamating, and careful burning, at short intervals, of the ward-sweepings in fires within the wards.
4. The isolation must be made absolute, so far as that is possible, by preventing direct and indirect communication between the patients within, and the population living external to, the depôts.

SCARLATINA AND MEASLES.

Whatever is true as to the propagation of smallpox by the wind, must necessarily be true of scarlatina and measles. Whatever measures are required to render effectual the isolation of smallpox, are also required to render effectual the isolation of scarlatina and measles. There is this practical difference, however, that neither of these two diseases is so frightful a scourge, though in some epidemics the ravages of scarlatina are very severe. There ought certainly to be means available in all towns and rural districts of isolating scarlatina. With respect to measles there is much less urgency.

TYPHUS.

Typhus is unquestionably a contagious disease; but its morbific emanations do not travel far, and they do not seem often to communicate the disease, unless they be considerably concentrated. The danger-area is probably limited to eight or ten feet. The physicians of London, Edinburgh, and Dublin, and, indeed, all physicians who have had much to do with typhus, are of opinion that the attendants in typhus wards run very little risk when the wards are spacious, well ventilated, and not overcrowded. Such also is the opinion which I have formed from my old personal observation of the disease in Edinburgh, and from all that I have subsequently seen and read of it.

When a clinical assistant in Dr Alison's wards in the old Royal Infirmary of Edinburgh in 1837, I had a severe attack of typhus fever, from which my recovery was unexpected. Immediately before, during, or soon after my attack, nearly all the medical and clinical assistants in the Infirmary—nine out of twelve, at least—who had to do with fever-wards, and likewise the majority of the fever-ward nurses, were laid down with the fever, which carried off three of my colleagues and several nurses. The duties of the clinical assistants necessitated their being some hours daily in low-roofed, stuffy wards, packed closely with typhus patients: the nurses, of course, had to spend most of their time in the vitiated atmosphere of these dismal rooms. Of the crowd of clinical students who passed through the fever-wards at the daily visit, only two or three took the fever; and among the students who only attended the surgical and general medical wards, it was, I recollect, said, when the question of contagion was discussed at the close of the epidemic, that no cases had occurred. These facts, and many others of like nature, clearly prove that typhus is contagious; and also, that when the atmosphere is vitiated by the emanations from a crowd of patients in a close room, it is a virulently contagious disease. They likewise prove, in an equally clear manner, that typhus patients need not be a source of much danger to those who attend upon them, and of no danger at all to those who only live in their vicinity and do not mix with them.

Typhus is sufficiently contagious to make it improper to distribute typhus patients in a general ward. Without wishing in any degree to modify this precept, I may express my belief that evil consequences would seldom arise from the introduction of a very limited number of typhus patients into a general ward. The disease, however, is one which ought to be isolated, either in special hospitals for its treatment, or in special wards of general hospitals. One or other plan may be adopted without the risk of establishing a centre of diffusion.

It is very important that the public should know that well-ventilated depôts of typhus patients are not dangerous even to the attendants; and that they are in no degree dangerous to a neighbourhood by atmospheric communication, as is smallpox. Officers of health, or other duly constituted authorities, ought to have the power of removing to appointed hospitals cases of typhus occurring in small private houses, particularly in crowded dwellings such as are inhabited by artisans and others of limited means. For their reception, fever hospitals, or fever wards in general hospitals, are essentially required.

The remarks now made in respect to the diffusion and isolation of Typhus are applicable to the diffusion and isolation of Relapsing Fever.

ENTERIC (OR TYPHOID) FEVER.

Enteric fever is contagious; and it ought, therefore, as a part of sanitary police administration, to be isolated, as soon as discovered, from the general population. Certain simple precautions, however, being taken—such as can be easily carried out—cases of enteric fever may be treated, without risk of diffusion, in general wards, or at home when the ventilation is good and the space sufficient. These statements are apparently, but not really, contradictory.

There exists in enteric fever a specific contagium which passes from the patient only in the intestinal discharges. This contagium is a living organism, which seems to be harmless at the time of its leaving the sick person's body, but in two, three, or four days multiplies and acquires a virulent vitality. When it then is swallowed or inhaled by a suitable subject for infection, it originates enteric fever in him. Dr Murchison, for reasons which have not generally been accepted as valid, was of opinion that the poison also originates spontaneously in sewers and cesspools; but the truth seems to lie with the late Dr William Budd of Bristol, who by his facts, and by his reasoning on the facts, has established that it is only the sewers and cesspools which have received typhoid-fever stools which contain the typhoid-fever contagium.

It is, I think, impossible for any physician who has seen much of enteric fever not to be impressed with the conviction that nurses who are daily changing sheets saturated with the intestinal evacuations of enteric fever patients do not incur risk of getting the disease. The explanation is to be found in the fact that the contagium has not, when first discharged, become possessed of its virulent vitality and reproductive power. These qualities it will never acquire if the soiled bedding be removed within a few hours from the bed and immersed in a solution of carbolic acid. If the dirty bedding be accumulated for days in heaps, a spread of the disease among those who come in contact with it will certainly occur. Three years ago I was called to meet in consultation a physician at Ferté-Milun in the Aisne. He met me at Villers-Cotterets station, and drove me several miles to our rendezvous, in an open carriage, through a charming country. At the time, enteric fever was rife in Paris. As we went along he pointed out to me on an open slope a comfortable dwelling, into which he said sickness rarely entered, but that a week ago typhoid fever had been brought into it from Paris. The son of the family had been ill in Paris, and had been fetched home in consequence. His malady was typhoid fever; on the journey he had copious alvine dejections, by which all his garments had been saturated. Some of them were put away in a bundle, and others had actually been allowed to remain for days till they had dried on his body. In addition to the young man who had come from Paris—and was convalescent—two other persons in the same house were laid down with the fever, the nature of which was not doubtful, as in the three the characteristic eruption had been seen. A month later, I had the same drive with my colleague, when he told me that the fever had not spread from the house, and that no more cases had occurred either in the house or district since my last visit. That the typhoid fever was imported from Paris, and communicated to two person whowere brought into contact with the garments soaked in the alvine discharges and kept close in a bundle, can hardly be doubted. This history shows that *the immunity of attendants and others depends upon the removal of soiled bedding and clothing being early carried out.* At the Hertford British Hospital, the soiled bedding is at once carried to an out-building some distance from the hospital, where the sheets and bed-dresses are disinfected. At the end of a case, the soiled bedding is burnt.

From the contagium of enteric fever being given off from the infected subject by the intestinal dejections, it is only under certain special conditions that the atmosphere is the medium by which it is communicated. The gas rising up from sewers and privies often conveys the contagium into the houses of the rich. All are familiar with cases of this kind. Cases are supposed to have occurred in which the poison-charged desiccated intestinal dejecta have been blown about by the winds, and have in that way prolonged the disease by being swallowed or taken into the lungs with the air. This has been particularly noticed in the outskirts of military camps and in country places where typhoid patients have relieved nature in situations exposed to sun and wind which were common resorts for the same purpose. Much more frequently, however, the contagium is diffused in localities and families by gaseous emanations from sewers, by the water of wells and of streams communicating with privies and sewers containing the dejecta of persons having enteric fever. It is also now a well-established fact that the disease is spread among the customers of particular dairies where the vessels are washed or the milk diluted by the poison-charged water. Whether enteric fever does not sometimes originate spontaneously from sewage gases is matter of controversy; but it is quite certain that the disease is spread from person to person by the diffusion of a specific contagium in the manner now briefly stated; and that is one capital fact with which we are concerned in considering the questions connected with hospital accommodation for enteric fever

Another most important capital fact bearing on the same point is this—that enteric fever does not spread in hospitals where cases of the disease are habitually distributed among the general patients. On account of the risk of swallowing or inhaling the poison in small crowded dwellings, where cleanliness is maintained with difficulty, and where one ill-kept privy is generally used in common by many families, it is essentially important to send into hospital with the least possible delay any case of enteric fever occurring in such habitations. It is satisfactory to know that the patients may be distributed without risk in the general wards of hospitals. On this point there is a general concurrence of medical opinion. Enteric fever is endemic, and sometimes epidemic, in Paris. It rarely happens that I am without one or several cases in my hospital or private practice. It is therefore from considerable personal knowledge that I have been convinced of the correctness of this generally adopted conclusion. In the nine years during which the Hertford British Hospital has been open, we have seldom been without one or more cases of enteric fever. In the autumn of 1877—when we were in the temporary building—an epidemic of enteric fever prevailed in Paris, and particularly in some streets and houses whence we derived many of our patients. On one particular day in that autumn, I noted that we had no less than 17 cases of enteric fever in a total of 22 cases in hospital. Neither then nor at any time during the nine years has any one of our resident staff or resident patients taken the fever. Six young men in succession have during that period held the post of resident clinical assistant; and our staff of nurses has ranged from six to eight, among whom there have, of course, been frequent personal changes. Although, as I have said, none of the in-patients and none of the *resident* staff have taken the disease in the nine years, my colleague as physician, the Hon. Alan Herbert, was recently laid down by an attack of typhoid fever, from which I am thankful to add (15th December 1880) that he has made a good recovery. He did not necessarily receive the contagium at the hospital; yet the following facts show that he might have done so:—From the 4th to the 16th October Dr Herbert was in daily attendance at the Hertford British Hospital, where, during that period, out of a total of about thirty patients, there were always two or three suffering from typhoid fever. When I resumed charge of the hospital on my return from Edinburgh on the 16th, I found three cases of enteric fever under treatment. One of the three patients was a young woman who had pneumonia, and was passing urine and fæces unconsciously in bed, which made it very difficult for the nurses to keep patient and bedding in a clean state. Up to the 16th, for several days, Dr Herbert had been examining the chest and abdomen of this patient. He left Paris for England on the 22d; two or three days later, he became unwell; and his malady soon afterwards declared itself to be typhoid fever. In connexion with the British Hospital experience it is necessary to mention Dr Herbert's attack and the attending circumstances. But it is evidently a case standing by itself, which is almost of no account when weighed against the facts on the other side of the question.

The few following lines from the annual report for 1864 of the London Fever Hospital (Liverpool Road), affords both confirmation and illustration of the statement that there is no risk to hospital inmates from gathering together in an hospital large numbers of cases of enteric fever:—"For three years," says the annual report in question, "the cases of enteric fever and the cases which have not been true fever have been kept together: 644 cases of the former and 1108 of the latter have thus been treated together in the same wards, interspersed among one another. Not one of the patients in these wards has contracted enteric fever. The nurses and attendants throughout the hospital have enjoyed a like immunity. During the last nine years, upwards of 1500 cases of enteric fever have been under treatment in the hospital; but only one nurse has suffered from it, and in her case it was doubtful whether the case did not originate out of the hospital."

Similar evidence abounds; but enough has now been stated to justify the following conclusions:—

1. Enteric fever is a contagious disease, the contagium of which exists in the intestinal excreta.

2. That the contagium is generally diffused by water or milk.

3. That perhaps the winds may spread the contagium when the sun-dried intestinal excreta are diffused as dust in the atmosphere.

4. That, for the safety of the community, cases of enteric fever ought to be isolated at home in hospitals, or where the excreta can be systematically destroyed or disinfected.

5. That the gathering together enteric fever patients in well-organized hospitals is neither dangerous to their inmates nor to the inhabitants of the vicinity.

CHOLERA.

The contagium of Cholera, like that of enteric fever, resides only in the intestinal dejecta. Everything, therefore, which has been said in respect to the isolation and diffusion of enteric fever is applicable to the isolation and diffusion of cholera—with this exception, perhaps, that from the much greater abundance of the intestinal dejecta in cholera, there is a much greater risk of the diffusion of its contagium. Consequently, it is a matter of prudence, if not of necessity, to remove cholera patients to special hospitals, or special wards, unless, of course, a system of thoroughly efficient cleanliness and isolation can be carried out at home.

PARIS, 15*th December* 1880.

ARTICLE III.—*On the Average Length and Weight of Mature New-born Scotch Children.* By FRANCIS OGSTON, jun., M.D., Assistant to the Professor of Medical Jurisprudence, and Lecturer on Practical Toxicology, in the University of Aberdeen.

IN the various aspects under which the maturity of the new-born infant presents itself to the medical jurist, the questions as to what length and weight may be considered as the average, and within what limits the child may fall and yet be fully mature, must always be regarded as highly important to answer as nearly as possible correctly.

On consulting our various medico-legal and obstetrical authorities, we find a wide diversity of opinions on this point, as the following figures, drawn from various sources, will show:—

Length, {
Minimum, 16, 18, and 19 inches.
Maximum, 18, 19, and 20¼ inches.
Mean, 18, 19, and 20 inches.

Weight, {
Minimum, 4, 5, and 6 lbs.
Maximum, 7, 8, and 11 lbs.
Mean, 6¼, 6¾, 7, 7⅛, 7¼, 7⅓, 8⅛, 8½, and 9 lbs.

A reason for this wide divergence of opinion may be found in the fact that most authors have made use of data drawn from the records of various countries and nationalities, which would give rise to serious error, since the children of different nations and climates appear to vary in size and weight in a similar ratio to the adults. It is proposed, then, to make an attempt to fix with greater precision these points by quoting in detail 200 carefully recorded cases, half of them drawn from the *medico-legal* practice of Aberdeen, and half from cases occurring in private practice in Aberdeen and Peterhead (the latter kindly furnished by Dr Jamieson of Peterhead). The cases from private practice were not taken on account of their extreme size and weight, but without selection where the measurement could be conveniently made, so that, though some of the children may seem to be unusually large, they can really be regarded as average ones, many more of unusual size having been unavoidably omitted.

To the medico-legal cases no such objection can be urged, all that occurred in our practice here having been given; therefore the data they furnish must be valuable, since, of course, the children were borne by the mothers when alone, and without assistance.

The cases have been divided into four tables, the first two containing the medico-legal cases, and the last two those which occurred in private practice.

Table I. contains the details of 83 cases where the children had been born alive—the *first* column giving the sex, the *second* the length, the *third* the weight, the *fourth* particularizing whether or not the navel-string remained attached to the abdomen, so as to prove that the child was really new-born, and the *fifth* giving details as to the cause of death and the freshness or putridity of the body. In this table the measurements are—

Length, 17½ to 23¼ inches; average, 20 in. 2½ lines.
Weight, 4 lbs. 8 oz., to 9 lbs. 12 oz.; „ 6 lbs. 12 oz. 2 drs.
Of 41 males—
Length, 18 to 23¼ inches; „ 20 in. 3 7/10 lines.
Weight, 4 lbs. 11 oz. to 9 lbs. 12 oz.; „ 7 lbs. 7 drs.
Of 42 females—
Length, 17½ to 21¾ inches; „ 20 in. 1 line.
Weight, 4 lbs. 8 oz. to 8 lbs. 15 oz. 4 drs.; „ 6 lbs. 8 oz. 4 drs.

TABLE I.

Sex.	Length.	Weight.			Navel-string.	Cause of Death, etc.
	Inches.	Lbs.	oz.	drs.		
1. Female,	20	6	12	0	attached	smothering at birth
2. „	20	8	10	0	„	unknown
3. „	20	7	4	0	„	apoplexia neonatorum
4. Male,	19	7	0	0	„	smothering at birth
5. „	18¾	5	8	0	„	apoplexia neonatorum
6. „	21	7	7	0	wanting	unknown
7. Female,	21	7	7	0	attached	smothering at birth
8. Male,	22	6	12	0	„	drowning „
9. Female,	21	6	0	0	„	smothering „
10. Male,	21	8	0	0	„	strangling „
11. „	20½	5	15	0	„	„ „
12. Female,	20	5	8	0	„	smothering „
13. Male,	20	6	13	0	„	„ „
14. Female,	21	8	10	0	„	„ „
15. Male,	21¼	8	8	0	„	„ „
16. Female,	21	4	8	0	wanting	unknown
17. Male,	21¼	7	11	0	attached	smothering at birth
18. „	19	4	12	0	„	fracture of skull at birth
19. Female,	20	6	12	0	„	smothering „
20. „	21	4	8	0	wanting	dislocation of neck at birth
21. Male,	20	7	12	0	attached	unknown
22. Female,	19½	6	8	8	„	partial respiration
23. „	19¾	5	0	0	wanting	unknown—putrid
24. Male,	21¼	8	1	0	attached	cut-throat at birth
25. Female,	19½	7	2	0	„	poisoning „
26. Female,	21½	8	15	8	„	smothering „
27. Male,	22	8	4	0	„	partial respiration
28. Female,	19¾	5	6	0	„	apoplexia neonatorum
29. „	19	5	6	0	„	wound at birth
30. „	18½	6	5	0	„	strangling „
31. Male,	20¼	6	11	0	„	suffocation „
32. „	23¼	7	11	8	„	unknown—putrid
33. „	18	4	11	8	„	fracture of skull at birth
34. Female,	19½	5	6	0	„	partial respiration
35. „	18¾	6	2	0	„	injury to head at birth

TABLE I.—*Continued.*

Sex.	Length.	Weight.			Navel-string.	Cause of Death, etc.
	Inches.	Lbs.	oz.	drs.		
36. Female,	20¾	6	6	0	attached	partial respiration
37. Male,	21¼	7	6	0	"	unknown
38. "	18	5	2	12	"	suffocation at birth
39. Female,	21½	5	15	0	"	partial respiration
40. "	20	6	12	8	"	suffocation at birth
41. "	18½	5	8	0	"	" "
42. Male,	19¼	5	0	0	"	unknown—putrid
43. Female,	20	7	0	0	"	suffocation at birth
44. Male,	20	7	1	4	"	fracture of skull at birth
45. Female,	21	6	14	0	"	partial respiration
46. "	21¾	6	13	0	"	unknown
47. Male,	21	7	0	0	"	" —putrid
48. Female,	20	6	4	0	"	violence at birth
49. "	20½	5	13	4	"	" "
50. Male,	20¼	6	8	0	"	suffocation "
51. "	20½	7	11	0	"	" "
52. Female,	17½	5	8	0	"	partial respiration
53. "	19½	5	0	0	"	unknown—putrid
54. "	19½	6	8	8	"	partial respiration
55. Male,	21¼	8	1	0	"	cut-throat at birth
56. "	20¼	6	8	0	"	suffocation "
57. "	19½	6	0	0	"	fracture of skull at birth
58. "	18	4	11	0	"	apoplexia neonatorum
59. Female,	21¼	8	4	0	"	smothering at birth
60. Male,	20	7	10	0	"	" "
61. Female,	20	6	0	0	"	unknown
62. "	20¼	6	10	8	"	smothering at birth
63. "	20	6	4	0	"	strangling "
64. Male,	21	8	0	0	"	smothering "
65. Female,	21¼	8	0	0	"	" "
66. "	19½	6	10	0	"	unknown—putrid
67. Male,	21	7	15	0	"	suffocation at birth
68. Female,	20	7	12	0	"	unknown
69. Male,	20¾	6	8	0	"	fracture of skull at birth
70. "	21½	7	14	0	"	injury to head "
71. Female,	20¼	5	12	0	"	smothering "
72. Male,	21	8	4	0	"	unknown
73. "	20½	8	0	0	"	smothering at birth
74. "	21	9	12	0	"	" "
75. "	20	6	8	0	"	partial respiration
76. "	19¾	7	0	0	"	smothering at birth
77. "	20½	6	7	0	"	" "
78. "	20½	8	0	0	"	strangling "
79. "	19	6	0	0	"	injury to head "
80. Female,	18	6	8	0	"	smothering "
81. Male,	20	9	0	0	"	" "
82. Female,	21½	7	4	0	"	drowning "
83. "	21	8	1	0	"	exposure to cold
	1677¼	563	1	6		
Average .	20 in. 2½ lines.	6	12	2		
From .	17½ to 23¼ in.	4 lbs. 8 oz. to 9 lbs. 12 oz.				

Table II. contains details of 14 cases where the children were found to have been dead-born, arranged in the same order as the first table. The measurements are:—

Length, 18 to 22 in.; average, 19 in. 6 lines.
Weight, 4 lbs. 1 oz. to 7 lbs. 6 oz. 4 drs.; „ 5 lbs. 15 oz. 3 drs.

Of 5 males—
Length, 18½ to 21 in.; „ 19 in. 6 lines.
Weight, 4 lbs. 13 oz. to 7 lbs. 3 oz.; „ 6 lbs.

Of 9 females—
Length, 18 to 22 in.; „ 21 in. 8 lines.
Weight, 4 lbs. 1 oz. to 7 lbs. 6 oz. 4 dr.; „ 5 lbs. 14 oz. 7½ drs.

The weight of one child was not recorded.

TABLE II.

Sex.	Length.	Weight.			Navel-string.	Circumstances of the Case.	
	Inches.	Lbs.	oz.	dr.			
1. Female,	19½	6	8	0	attached	taken from womb of dead mother	
2. „	18	6	8	0	„	still-born	
3. Male,	19½	7	3	0	„	„	
4. „	18½	4	13	0	„	„	
5. Female,	19	5	15	0	„	„	
6. „	18	4	1	0	„	„	
7. „	20	6	7	0	„	„	—putrid
8. „	22	7	6	8	„	„	
9. Male,	21	6	9	0	„	„	—putrid
10. Female,	18	4	1	0	„	„	
11. „	20	6	7	0	„	„	—putrid
12. Male,	18½	5	7	0	„	„	
13. Female,	20	6	10	0	„	„	
14. Male,	20¼	6	1	0	„	„	
	272¼	77	8	4			
Average .	19½	5	15	3			
From .	18 to 22 in.	4 lb. 1 oz. to 7 lb. 6½ oz.					

In these two tables we have altogether 97 cases, in one of which, however, the weight is not given. The measurements are—

Length of 97 children, 17½ to 23¼ inches; average, 20 in. 1 line.
Weight of 96 children, 4 lbs. 1 oz. to 9 lbs. 12 oz.; average, 6 lbs. 10 oz. 5 dr.

Of males—
Length of 46, 18 to 23¼ inches; average, 20 in. 2⅘ lines.
Weight of 46, 4 lbs. 11 oz. to 9 lbs. 12 oz.; average, 6 lbs. 15 oz. 1 dr.

Of females—
Length of 51, 17½ to 22 inches; average, 19 in. 11½ lines.
Weight of 50, 4 lbs. 1 oz. to 8 lbs. 15 oz. 4 drs.; average, 6 lbs. 6 oz. 5 drs.

Tables III. and IV. contain the particulars of cases from private practice, 103 in number; the first three columns being arranged in the same way as the former tables, the last referring to the character of the labour, and, where operative assistance was required, noting the kind of help given, the reasons for its having been rendered, and the result to the child, which survived in all except one of the cases.

Table III. gives the details of 76 children born naturally, where either the length (in 37 cases) or the weight (in 44 cases), or both (in 5 cases), were noted. The measurements are—

Length of 37, 15 to 23 inches;	average,	20 in. 4$\frac{7}{10}$ lines.
Weight of 44, 4 to 11 lbs.;	„	8 lbs. 6 oz. 5 drs.
Of males—		
Length of 24, 17 to 23 inches;	„	20 in. 7 lines.
Weight of 23, 7 to 11 lbs.;	„	8 lbs. 11 oz. 1 dr.
Of females—		
Length of 13, 15 to 23 inches;	„	20 in. 1 line.
Weight of 21, 4 to 10 lbs.;	„	8 lbs. 1 oz. 4 drs.

TABLE III.

Sex.	Length.	Weight.			Circumstances of the Birth.
	Inches.	Lbs.	oz.	drs.	
1. Female,	20		...		natural labour
2. Male,	21		...		easy „
3. Female,	20		...		„ „
4. „	19½		...		„ „
5. „	19		...		„ „
6. „	19¾		...		„ „
7. „	23		...		„ „
8. „	21		...		„ „
9. „	20		...		rapid „
10. „	21		...		„ „
11. „	20		...		„ „ before arrival
12. „	20		...		„ „
13. „	20		...		„ „
14. Female,	19½		...		„ „
15. „	21½		...		easy „
16. Male,	20¼		...		„ „
17. Female,	21½		...		rapid „
18. Male,	22½	9	0	0	„ „ in one pain
19. „	19		...		easy „
20. „	20½	8	8	0	„ „
21. „	20½		...		„ „
22. „	17		...		„ „
23. Female,	20½		...		rapid „ before arrival
24. Male,	20		...		„ „ „
25. „	21½		...		„ „ „
26. Female,	20½		...		easy „
27. „	20		...		rapid „ one hour

TABLE III.—*Continued.*

Sex.	Length.	Weight.			Circumstances of the Birth.
	Inches.	Lbs.	oz.	drs.	
28. Male,	19⅛		...		easy labour
29. ”	19½		...		rapid „ before arrival
30. ”	22		...		easy „
31. Female,	...	8	12	0	natural „
32. ”	...	7	0	0	„ „
33. ”	...	8	0	0	„ „
34. Male,	20		...		„ „
35. ”	23		...		„ „
36. Female,	...	8	0	0	rapid „
37. ”	...	6	0	0	„ „
38. Male,	...	11	0	0	natural „
39. ”	...	11	0	0	rapid „ before arrival
40. ”	...	9	0	0	„ „
41. ”	...	7	0	0	„ „
42. Female,	15	4	0	0	„ „ before arrival
43. ”	...	10	0	0	„ „
44. ”	...	6	0	0	„ „
45. Male,	...	7	0	0	slow „ from inertia uteri
46. ”	...	8	0	0	rapid „
47. Female,	...	8	12	0	easy „
48. ”	...	9	0	0	rapid „
49. ”	...	8	0	0	easy „
50. ”	...	7	0	0	„ „
51. Male,	...	7	0	0	rapid „
52. Female,	...	10	0	0	easy „
53. Male,	...	8	0	0	rapid „
54. ”	...	9	0	0	easy „
55. Female,	23	8	8	0	rapid „ before arrival
56. Male,	22	9	8	0	easy „
57. Female,	...	8	0	0	„ „
58. ”	...	9	0	0	rapid „
59. ”	...	10	0	0	easy „
60. Male,	...	9	8	0	rapid „ before arrival
61. Female,	...	10	0	0	„ „
62. Male,	...	9	4	0	easy „
63. Female,	...	10	0	0	rapid „
64. Male,	...	9	8	0	easy „
65. Female,	...	7	0	0	rapid „
66. Male,	...	9	0	0	easy „
67. ”	...	7	8	0	rapid „
68. ”	...	9	0	0	„ „
69. ”	...	9	8	0	easy „
70. Female,	...	7	0	0	rapid „ before arrival
71. Male,	...	8	0	0	easy „
72. ”	...	9	0	0	„ „
73. ”	...	8	0	0	rapid „
74. ”	...	8	0	0	easy „
75. ”	21¼		...		„ „
76. Female,	20¼		...		„ „
	754½	370	4	0	
Average of	37=20 in. 4$\frac{1}{10}$ lines.	44 8 lbs. 6 oz. 5 drs.			
From	15 to 23 in.	4 lbs. to 11 lbs.			

Table IV. contains 27 cases of assisted labour, the children, with one exception, surviving their birth. Of these either the length (in 12 cases) or the weight (in 18 cases), or both (in 3 cases), were noted. The measurements are—

Length of 12, 18½ to 24 inches; average, 21 in. 6½ lines.
Weight of 18, 6 lbs. 12 oz. to 12 lbs.; average, 8 lbs. 11 oz. 6 drs.

Of males—

Length of 5, 21½ to 24 inches; average, 22 in. 10⅘ lines.
Weight of 8, 6 lbs. 12 oz. to 12 lbs.; average, 9 lbs. 8 oz. 4 drs.

Of females—

Length of 7, 18½ to 22½ inches; average, 20 in. 6⅘ lines.
Weight of 10, 7 to 10 lbs.; average, 8 lbs. 1 oz. 4⅘ drs.

TABLE IV.

Sex.	Length.	Weight.			Circumstances of the Birth.
	Inches.	Lbs.	oz.	drs.	
1. Male,	23		...		Forceps for narrow brim—live born.
2. Female,	19		...		„ inertia uteri— „
3. „	22½		...		„ „ „
4. Male,	24		...		version for narrow brim— „
5. Female,	22		...		forceps for malposition 3d— „
6. „	20½		...		„ inertia uteri „
7. „	18½		...		„ malposition 3d— „
8. „	19½		...		version for narrow brim „
9. Male,	21½	6	12	0	forceps „ „ „
10. Female,	...	10	0	0	„ —dead born
11. „	...	7	0	0	„ —live born
12. Male,	24		...		„ size „
13. „	...	12	0	0	„ „ „
14. „	22	11	0	0	„ „ „
15. „	...	11	0	0	„ „ „
16. Female,	...	8	0	0	„ „ inertia uteri „
17. „	...	9	0	0	„ „ malposition „
18. „	...	7	0	0	„ „ slow 1st stage „
19. „	22	8	0	0	„ „ narrow pelvis „
20. Male,	...	8	0	0	„ „ „ „
21. Female,	...	9	0	0	„ „ „ „
22. Male,	...	8	8	0	„ „ „ „
23. Female,	...	7	0	0	„ „ inertia uteri „
24. „	...	9	0	0	„ „ malposition „
25. Male,	...	10	0	0	„ „ inertia uteri „
26. Female,	...	7	0	0	„ „ narrow outlet „
27. Male,	...	9	0	0	„ „ „ „
	258½	157	4	0	
Average of	12=21 in. 6½ lines.	18=8 lbs. 11 oz. 6 drs.			
From .	18½ to 24 in.	6 lbs. 12 oz. to 12 lbs.			

In these two tables we have altogether 103 cases, in 49 of which the lengths, and in 62 the weight, are given. The measurements are—
Length of 49, 15 to 24 inches; average, 20 in. 8 lines.
Weight of 62, 4 to 12 lbs.; average, 8 lbs. 8 oz. 1 dr.
Of males,—
Length of 29, 17 to 24 inches; average, 20 in. $11\frac{9}{10}$ lines.
Weight of 31, 6 lbs. 12 oz. to 12 lbs.; average, 8 lbs. 14 oz. $5\frac{3}{5}$ drs.
Of females—
Length of 20, 15 to 23 inches; average, 20 in. $2\frac{1}{2}$ lines.
Weight of 31, 4 to 10 lbs; average 8 lbs. 1 oz. $4\frac{3}{10}$ drs.

If we now take Tables I. and III. together, as being cases of *unassisted live births*, we have 159 children in all, in 120 of which the lengths, and in 127 the weights, were noted. The measurements are—
Length, 15 to $23\frac{1}{2}$ inches; average, 20 in. 3 lines.
Weight, 4 to 11 lbs.; average, 7 lbs. 5 oz. 4 drs.
Of males—
Length of 65, 17 to $23\frac{1}{2}$ inches; average, 20 in. 5 lines.
Weight of 64, 4 lbs. 11 oz. to 11 lbs.; average, 7 lbs. 10 oz. $3\frac{1}{2}$ drs.
Of females—
Length of 55, 15 to 23 inches; average, 20 in. $0\frac{9}{10}$ lines.
Weight of 63, 4 to 10 lbs.; average, 7 lbs. 5 dr.

Taking also Tables II. and IV. together, containing cases of children either *born dead, or with assistance during the labour*, we have 41 in all, in 26 of which the lengths, and in 31 the weights, were noted. The measurements are—
Length, 18 to 24 inches; average, 20 in. $4\frac{9}{10}$ lines.
Weight, 4 lbs. 1 oz. to 12 lbs.; average, 7 lbs. 9 oz. 1 dr.
Of males—
Length of 10, $18\frac{1}{2}$ to 24 inches; average, 21 in. $2\frac{3}{5}$ lines.
Weight of 13, 4 lbs. 13 oz. to 12 lbs.; average, 8 lbs. 2 oz. $6\frac{7}{10}$ drs.
Of females—
Length of 16, 18 to $22\frac{1}{2}$ inches; average, 19 in. $10\frac{4}{5}$ lines.
Weight of 18, 4 lbs. 1 oz. to 10 lbs.; average, 7 lbs. 2 oz. $1\frac{1}{2}$ dr.

Taking all the tables together, we have 200 cases, in 146 of which the lengths, in 158 the weights, and in 104 both lengths and weights, are recorded. The measurements are—
Length, 15 to 24 inches; average, 20 in. $3\frac{4}{10}$ lines.
Weight, 4 to 12 lbs.; average, 7 lbs. 6 oz. $2\frac{3}{10}$ dr.
Of males—
Length of 75, 17 to 24 inches; average, 20 in. $6\frac{3}{10}$ lines.

Weight of 77, 4 lbs. 11 oz. to 12 lbs.; average 7 lbs. 11 oz., $6\frac{8}{10}$ drs.

Of females—

Length of 71, 15 to 23 inches; average, 20 in. $0\frac{4}{15}$ lines.

Weight of 81, 4 to 10 lbs.; average, 7 lbs. 1 oz.

From these calculations it follows that the average size of the new-born infant (in the north-eastern part of Scotland, at least) has hitherto been estimated at too low a standard, the average length, as may be seen above, being *twenty inches and nearly a quarter* (20 inches $3\frac{7}{10}$ lines), and the weight *seven pounds and over a third* (7 lbs. 6 oz. $2\frac{3}{10}$ dr.), and that male children exceed females in length by about half an inch, and in weight by nearly three-quarters of a pound.

By a glance at these tables it may be seen that the length of a child has no constant relation to its weight, the ratio varying to a most surprising degree.

It was thought advisable to increase the value of these deductions by a reference to the published figures of various authors, but most of these were found to differ so widely, as has been previously mentioned, for the reason, apparently, that they had mixed up the children of France and Belgium, which are small, with those of Northern Germany and our own country, which are much larger, so as to produce a fixed ratio, useful perhaps for the whole human race, but unreliable for founding an exact calculation which might serve the medical jurists of this country. Sir James Simpson has recorded the results of 100 observations, fixing the length of males at 20 inches 5 lines, for females at 19 inches 10 lines, and for both together at 20 inches 3 lines—an average almost identical with that given above.

Seeing, then, that new-born mature and healthy children may vary in length and weight so widely—in length between 15 and 24 inches, and in weight between 4 and 12 lbs.—it may be well to see between what limits the majority of newly-born children lie, so as to fix what will be the probable length and weight which we should expect to find in any given case.

With this in view Tables V. and VI. have been prepared from the above data, aided by cases drawn from a recent publication by Dr Matthews Duncan, *On the Female Perineum;* and from the Scotch children in a paper by the late Dr James Cumming, *On the Uterine Souffle* (*Edinburgh Medical Journal*, 1875).

In Table V. are given the lengths of 169 children, out of which 61, or more than a third, were between 20 and 21, and 129, or almost exactly three-fourths, between 19 and 22 inches, while two-thirds were over 20 inches in length. A. and B., giving the length of the males and females separately, will be found to correspond pretty closely with these averages.

TABLE V.

A.

Lengths of Male Children.			
	F. O. & J.	Duncan.	Total.
15 to 17 in.	...	...	...
17 to 18 „	1	2	3
18 to 19 „	6	1	7
19 to 20 „	11	3	14
20 to 21 „	26	6	32
21 to 22 „	19	1	20
22 to 23 „	6	...	6
23 to 24 „	4	...	4
24 to 25 „	2	...	2
	75	13	88

Under 20 inches, 24; over 20 inches, 64.

B.

Lengths of Female Children.			
	F. O. & J.	Duncan.	Total.
15 to 17 in.	1	...	1
17 to 18 „	1	...	1
18 to 19 „	8	3	11
19 to 20 „	16	3	19
20 to 21 „	25	4	29
21 to 22 „	15	...	15
22 to 23 „	4	...	4
23 to 24 „	1	...	1
24 to 25 „	...	...	...
	71	10	81

Under 20 inches, 32; over 20 inches, 49.

C.

Lengths of Males and Females together.			
	F. O. & J.	Duncan.	Total.
15 to 17 in.	1	...	1
17 to 18 „	2	2	4
18 to 19 „	14	4	18
19 to 20 „	27	6	33
20 to 21 „	51	10	61
21 to 22 „	34	1	35
22 to 23 „	10	...	10
23 to 24 „	5	...	5
24 to 25 „	2	...	2
	146	23	169

Under 20 inches, 56 ; over 20 inches, 113.

TABLE VI.

A.

	Weight of Male Children.			
	F. O. & J.	Duncan.	Cumming.	Total.
4 to 5 lbs.	4	...	...	4
5 to 6 „	5	4	...	9
6 to 7 „	13	8	4	25
7 to 8 „	18	12	1	31
8 to 9 „	17	5	2	24
9 to 10 „	14	...	1	15
10 to 11 „	1	...	...	1
11 to 12 „	4	...	...	4
12+	1	...	...	1
	77	29	8	114

Under 7 lbs., 38; over 7 lbs., 76.

B.

	Weight of Female Children.			
	F. O. & J.	Duncan.	Cumming.	Total.
4 to 5 lbs.	5	...	...	5
5 to 6 „	12	2	3	17
6 to 7 „	23	4	8	35
7 to 8 „	15	5	7	27
8 to 9 „	15	6	3	24
9 to 10 „	5	1	...	6
10 to 11 „	6	1	...	7
11 to 12 „	...	...	...	...
12+	...	...	...	...
	81	19	21	121

Under 7 lbs., 57; over 7 lbs., 64.

C.

	Weight of Males and Females together.			
	F. O. & J.	Duncan.	Cumming.	Total.
4 to 5 lbs.	9	...	...	9
5 to 6 „	17	6	3	26
6 to 7 „	36	12	12	60
7 to 8 „	33	17	8	58
8 to 9 „	32	11	5	48
9 to 10 „	19	1	1	21
10 to 11 „	7	1	...	8
11 to 12 „	4	...	...	4
12+	1	...	...	1
	158	48	29	235

Under 7 lbs., 95; over 7 lbs., 140.

TABLE VII.

	LENGTH.			WEIGHT.			AVERAGE.
	M.	F.	Average.	M.	F.	Average.	Length & Weight.
Russia—							
Richter (Moscow),	...	...	...	5 to	11 lbs.	9 lbs. 1 oz.	9 lbs. 1 oz.
America—							
Storer, . .	...	...	...	9 lbs.	8 lbs.	8 lbs. 8 oz.	L. 18 in. 5½ lines. W. 7 lbs. 5 oz. 5 drs.
Metcalf, . .	...	...	...	8 lbs. 6 oz.	7 lbs. 12 oz.	8 lbs. 2 oz.	
Joseph Clarke,	...	...	...	7 lbs. 5 oz. 7 drs.	6 lbs. 11 oz. 6 drs.	7 lbs.	
Burwell, . .	19 in. 1 l.	18 in. 9 l.	18 in. 11 l.	7 lbs. 0 oz. 6 drs.	6 lbs. 8 oz. 4 drs.	6 lbs. 12 oz. 5 drs.	
Wharton & Stillé,	...	...	18 in.	...	...	6 lbs. 7 oz.	
Scotland—							
Jamieson & Ogston,	20 in. 0½ l.	20 in.	20 in. 3 l.	7 lbs. 11 oz. 6 drs.	7 lbs. 1 oz.	7 lbs. 6 oz. 2 drs.	L. 19 in. 10 lines. W. 7 lbs. 3 oz.
Matthews Duncan,	19 in. 3 l.	19 in. 1 l.	19 in. 2 l.	7 lbs.	7 lbs. 8 oz. 4 drs.	7 lbs. 3 oz. 3 drs.	
J. Cumming, .	...	...	...	7 lbs. 4 oz. 4 drs.	6 lbs. 13 oz.	6 lbs. 15 oz.	
Leishmann, .	...	...	19 to 24 in.	...	...	7 lbs. 4 oz.	
Sir J. Y. Simpson,	20 in. 5 l.	19 in. 10 l.	20 in. 3 l.	7 lbs. 9 oz. 1 dr.	6 lbs. 12 oz.	7 lbs. 2 oz. 4 drs.	
England—							
Taylor, . .	...	...	18 in.	...	...	6 to 7 lbs.	L. 18 in. 6 lines. W. 6 lbs. 11 oz.
Guy, . . .	...	...	19 in.	...	...	6 lbs. 11 oz.	
Macaulay, . .	...	...	...	...	...	5 to 8 lbs.	
Willowby, . .	...	...	...	...	...	7 lbs.	
Meadows, . .	...	...	18 to 20 in.	...	...	6 to 8 lbs.	
Beck, . . .	...	...	19 to 20 in.	...	...	5 to 8 lbs.	
Ireland—							
Clarke (Dublin), .	...	...	...	...	...	4 to 11 lbs.	W. 7 lb. 11 oz.
Germany—							
Carus (Stuttgart).	...	...	...	...	...	6 lbs. 13 oz. 4 drs.	W. 7 lbs. 0 oz. 6 drs.
Münich Hospital,	...	...	...	...	...	7 lbs. 4 oz.	
France—							
Camus, . .	...	...	...	..	...	6 lbs. 4 oz.	L. 17 in. W. 6 lbs. 4 oz.
Lecieux, . .	...	...	...	...	...	6 lbs. 4 oz.	
Devergie, . .	..	...	16 to 18 in.	...	...	6 lbs. 4 oz.	
Chaussier, . .	...	...	...	...	...	6 lbs. 4 oz.	
Baudeloque, .	...	...	...	...	...	6 lbs. 4 oz.	
Belgium—							
Quetelet, . .	...	...	...	6 lbs. 8 oz.	5 lbs. 15 oz.	6 lbs. 3 oz.	W. 6 lbs. 3 oz.

In Table VI. we have the weights of 235 children. Here 60, or rather more than a quarter, were between 6 and 7 pounds, and 58 between 7 and 8 pounds, making together more than the half between 6 and 8 pounds; and 166, or nearly two-thirds, were between 6 and 9 pounds, while 140, or a little short of two-thirds, were over 7 pounds in weight. A. and B. give results not very dissimilar, in the former the greatest number (of males) being between 7 and 8 pounds, and in the latter the greatest number (of females) between 6 and 7 pounds in weight.

It is proposed, then, founding upon these data, to fix as the average for Scotch children a length of between 19 and 22 inches, and a weight of between 6 and 9 pounds.

In conclusion, it would appear to be the fact that nationality and climate seem to exert a distinct influence on the length and weight of the new-born infant in somewhat the same ratio as they do in the case of adults, as the preceding Table VII., drawn from a few of the leading authors of various countries, seems to show.

ARTICLE IV.—*Notes of a Case of Locomotor Ataxy, with Post-Mortem Examination.* By BYROM BRAMWELL, M.D., F.R.C.P., Lecturer on the Principles and Practice of Medicine and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh, late Physician and Pathologist to the Newcastle-on-Tyne Infirmary, etc., etc.

WHEN working last year in the pathological laboratory of the University, I had, through the kindness of Dr Hamilton, an opportunity of examining the spinal cord of a lunatic, who for many years was an inmate of the West Riding Asylum. The following abstract of the clinical history of the case is condensed from full notes which were kindly furnished to me by my friend Dr Herbert Major.

J. P., a waterman, æt. 43, living at Selby, was admitted to the West Riding Asylum on the 21st October 1872, suffering from a second attack of insanity. The *first attack*, for which he had been twelve months under treatment in the same institution, had occurred about six years previously, and was characterized by melancholia with delusions. He was discharged cured. The *present attack* had commenced in January 1872, and he was at that time admitted to the North Riding Asylum, whence he was transferred to Dr Major's care on the 21st October 1872, as stated above.

The chief symptoms of the mental disorder were, depression of spirits, with delusions; he was under the impression that his medical attendants had robbed him of all virile power, and that he (the patient) had direct communication with the Almighty, etc. He refused his food, was restless at night, and wet and dirty in his habits. His memory for past events was accurate.

The *tongue* was clean, but tremulous; when protruded, it was directed slightly to the left side. *Speech* was thick and hesitating. *Sight*, *hearing*, and *taste* normal. The *appetite* fair, *bowels* regular. The *circulatory* and *respiratory* systems normal.

The *gait* was very unsteady. He walked on his heels, and the legs were thrown forwards and upwards in the characteristic ataxic manner. He was unable to stand upright when his heels were placed close together. On closing the eyes he staggered, and fell, if not prevented. There was no trace of reflex action in the lower extremities. The legs were very much wasted. He stated that he felt no pain,[1] and no tender spot could be detected over the spine. The unsteadiness of gait dated back sixteen months, and was apparently the result of a spinal injury. He had fallen backwards into the hold of his barge, a distance of seven feet, and had pitched with his back across a baulk of timber. The injury was evidently a severe one; he was unconscious for some time, and was laid up for a month in the York Infirmary. On his discharge from hospital he noticed that his legs occasionally gave way under him.

In December 1872 it was noted: He has suffered much of late from pains in the lower extremities and chest. The pains are evidently centric in character. He is heavy and lethargic, and shows a tendency to refuse food. (His mental condition had improved considerably since admission).

3d January 1873.—Symptoms as before. Ordered pills containing nitrate of silver.

3d March 1873.—No change; pains as before.

12th March.—Nitrate of silver omitted. Gets very feeble.

20th June 1874.—Is going through an attack of maniacal excitement, which has lasted a week. Ordered ext. physostig. gr. ⅓ *ter in die.*

29th June 1874.—Still very restless and excited. Calabar bean omitted. Ordered pills containing arg. nit. gr. 1, and ext. opii gr. ¼.

1st July 1874.—Excitement continues.

12th August 1874.—Patient is somewhat quieter.

1st September 1874.—Much quieter. Has been taking recently Cannabis indica and pot. bromid. mixture with good effect.

12th October 1874.—Slightly excited again. Medecine (Cannabis ind.) resumed.

27th September 1875.—Has been very quiet and composed for several months. Ataxic symptoms unaltered.

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[1] Ataxics very frequently say that they have no pain, but admit that they suffer from "rheumatism," "neuralgia," "flying gout," etc. In this case, as is afterwards noted, the characteristic lightning-like pains were a prominent feature of the case.

3d August 1876.—Has been much excited for some time; is very foul in his language, and would, if he could, be aggressive. He now gets occasional doses of hyoscyamine, which affect him powerfully. Excitement continues to recur at intervals.

8th March 1877.—Mentally is very much better. Has had an abscess behind the right thigh, which has been opened. Has still great pain in legs and feet, due to centric disease.

14th April 1877.—Is now perfectly composed, and even depressed. Has no delusion or exalted idea; but his mental power is lax, and he mistakes identity. Pupils equal; tongue tremulous; no tremor of lips or face generally. *General paralysis* is definitely excluded.

2d August 1878.—Is usually composed and in moderate condition; but he has habitually some exaltation of ideas. He believes himself to be possessed of several mills.

24th May 1879.—More excited, and delusions more marked.

27th June 1879.—Again in a state of acute mania, and full of exalted ideas as to his personality, mills, etc. No tremor of lips or tongue; articulation distinct.

1st August 1879.—Has become much weaker, and has lost flesh lately; is now confined to bed. Bed-sores are forming over the sacrum and trochanters; the glans penis is affected with unhealthy ulceration.

18th August 1879.—Gradually lost consciousness, and died this morning.

The *post-mortem* examination was made thirty-three hours after death.

Body.—Considerably emaciated, especially the thighs and legs. There are no bruises, but there is a large bed-sore over the sacrum, and a smaller one over either trochanter.

Head.—Skull-cap symmetrical. Bones thicker than usual, and dense. No adhesion of dura mater; the convolutions of the brain show a slight degree of wasting in frontal and parietal regions of the upper surface, there being also in these regions a slight degree of opacity of the arachnoid. No wasting is observable in the occipital regions or elsewhere. The large vessels of the base are decidedly thickened and atheromatous. There is no special congestion of the membranes, which are much thickened and œdematous,[1] especially over the areas of wasting. The consistence of the brain is not by any means reduced. Convolutions, on the whole, are well developed, and present no special abnormality in course or arrangement. The cortex of the convolutions is of very good depth; its vessels are evidently coarse, as are those of the white matter. No softening, recent or old, to be detected. To the naked eye the cerebellum appears normal. The medulla is very small, and as regards the pons, with the exception of a small superficial gray patch, apparently of sclerosis, on the lower and anterior part of its right side, no abnormal appearance is to be detected. There is no unnatural firmness to be observed.

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[1] The pia mater was *nowhere adherent* to the subjacent cortex.

Brain Weights.

	Grammes.
Whole brain weighs	1357
Right hemisphere, ...	583
Left do., ...	574
Right frontal, ...	245
Left do., ...	247
Cerebellum, ...	172
Pons, ...	17
Medulla, ...	7

There is more serous fluid than usual in the membranes of the spinal cord. The cord is decidedly small and wasted. It does not appear unusually hard.

Thorax. — Pericardium empty. Heart 235 grammes. The valves competent to the water test. There is no atheroma or special thickening. The mitral, tricuspid, and other valves normal. The muscular substance is normal in colour and density, but thin. There is much fat over the right side of the heart, and a superficial pale patch as large as a five-shilling piece. All the cavities contained pale clots and dark blood.

Right Lung, 335 grammes. It was firmly adherent to the parietes and also to the diaphragm. Lower lobe slightly congested; margins very emphysematous. There are two cretaceous deposits, the size of peas, at the apex. A small quantity of bloody mucus in the bronchi.

Left Lung, 360 grammes; adherent to the surrounding parts, and in a similar condition to the right.

Liver, 1401 grammes. Very firmly adherent to stomach and diaphragm, but normal.

Spleen, 158 grammes. Capsule thickened, and adherent to cardiac end of stomach. Nothing abnormal noticeable.

Right Kidney, 140 grammes; capsule adherent in patches; small granular deposits like tubercle on the surface; the cortical and pyramidal layers are narrower than usual; the pelvis is much dilated, and contains much fat.

Left Kidney, weight 111 grammes; capsule adherent; surface studded with small superficial abscesses containing pus. Pelvis very widely dilated, and full of fœtid, greenish, thick pus. Cortical layer thicker than usual, and the pyramidal layer in five or six places encroached on by abscesses.

The *bladder* much thickened, and contains thick, purulent urine.

Microscopical Examination of the Spinal Cord.—The spinal cord was a typical example of the advanced stage of locomotor ataxy.

Dr Byrom Bramwell's Case of Locomotor Ataxy.

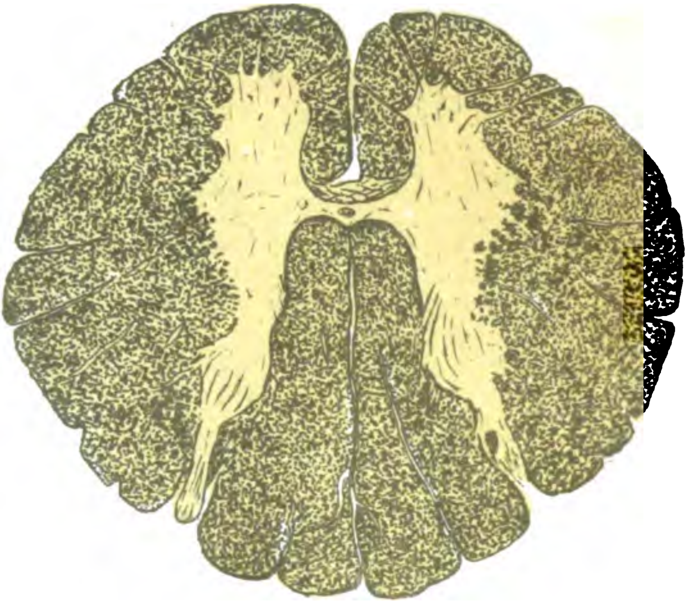

Fig. 1.—Transverse section through the dorsal region of the healthy spinal cord of a child, stained with perosmic acid, and mounted in Farrant's solution. X 20 diameters.

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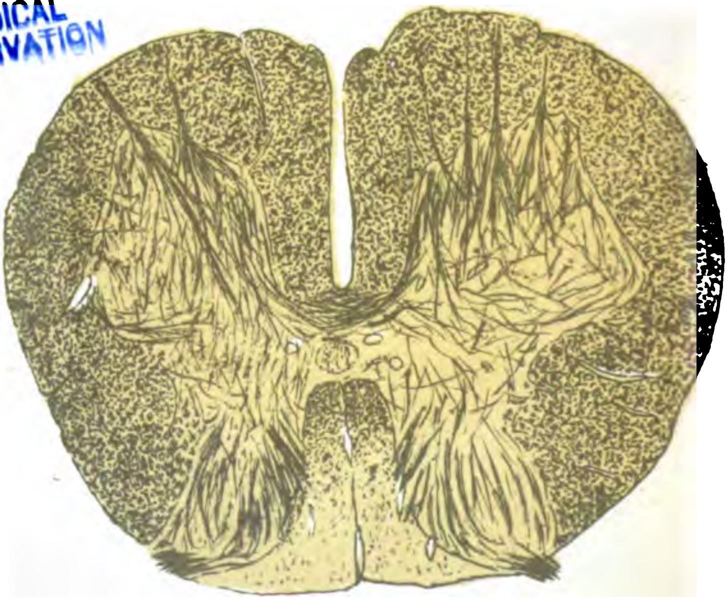

Fig. 2.—Transverse section through the lower lumbar region of the cord in Locomotor Ataxy stained with perosmic acid, and mounted in Farrant's solution. X 20 diameters.

DR BYROM BRAMWELL'S CASE OF LOCOMOTOR ATAXY.

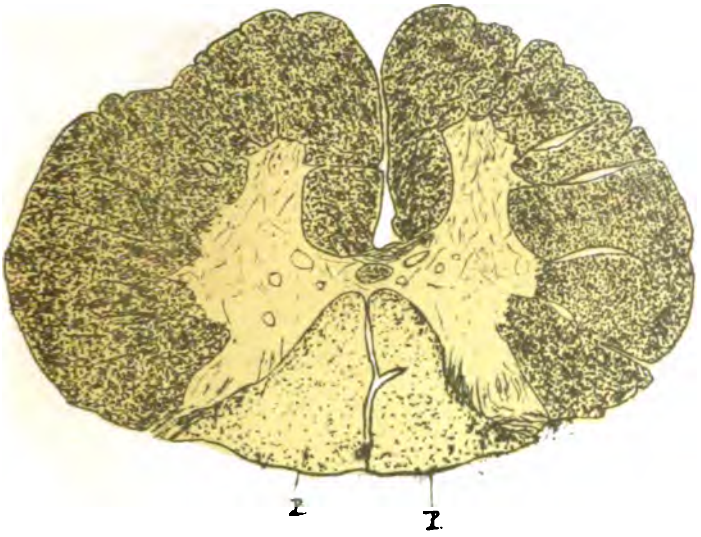

Fig. 3.—Transverse section through the dorsal region of the cord in Locomotor Ataxy, stained with perosmic acid, and mounted in Farrant's solution. X 20 diameters.

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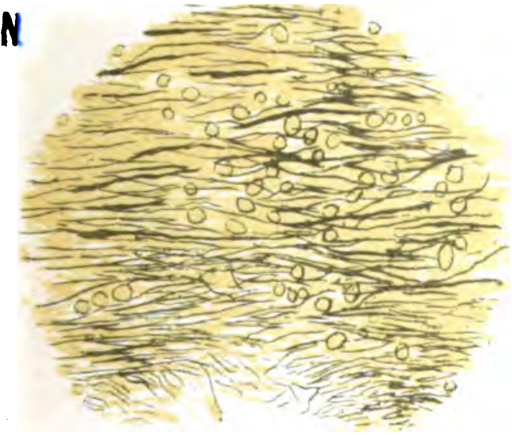

Fig. 4.—Longitudinal section through posterior column in Locomotor Ataxy, stained with perosmic acid, cleared with oil of cloves, and mounted in dammar. X 250 diameters.

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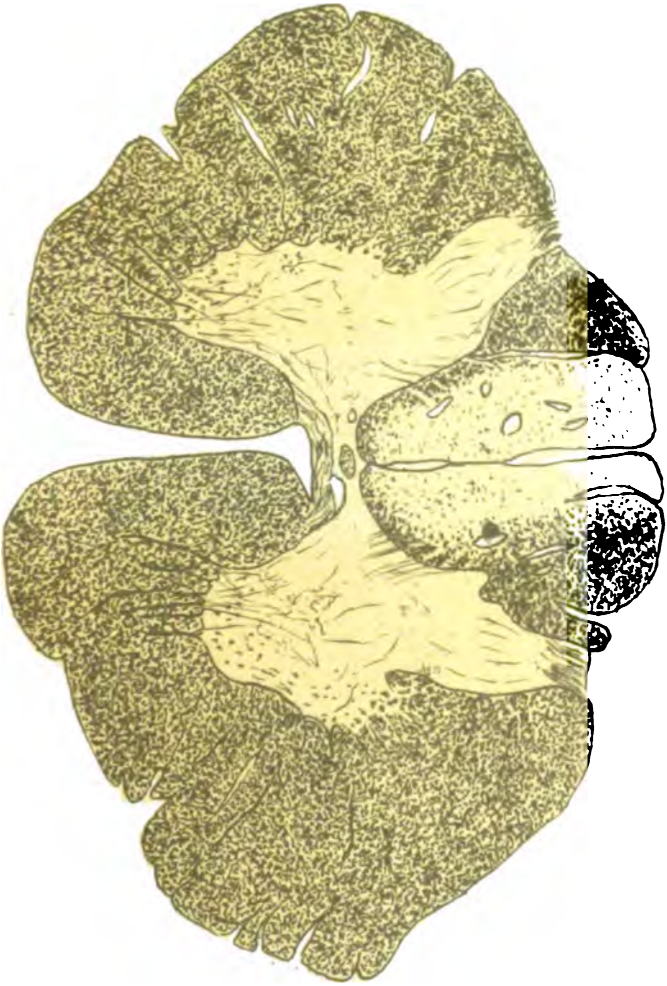

FIG. 5.—**Transverse section through the cervical region of the cord in Locomotor Ataxy, stained with perosmic acid, and mounted in Farrant's solution. X 20 diameters.**

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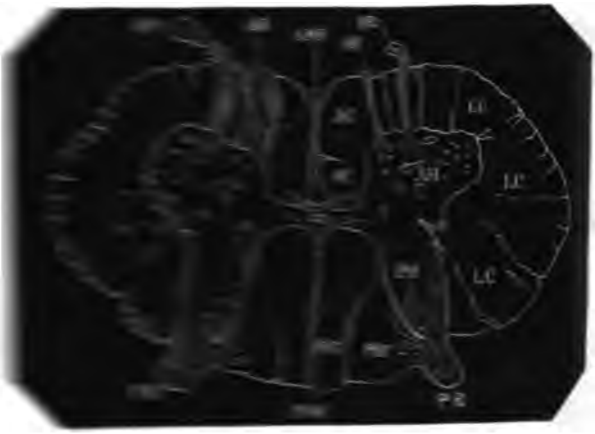
[illegible] Case of Locomotor Ataxy.



[illegible] in the cervical region, from a [illegible] diameters.

[illegible]

[illegible]

[illegible] of Charcot.

[illegible] column of

[illegible]

[illegible] ; the

[illegible]

The observations of Pierret have shown that the lesion in locomotor ataxy commences in the outermost part of the posterior columns (the root-zone column of Charcot; see P E C in Fig. 6). In the vast majority of cases the lumbar and lower dorsal regions are first invaded. As the disease advances the whole of the posterior column (both the root-zone column and the column of Goll (see Figs. 2 and 3) becomes affected. In the cervical region the lesion is usually confined to the columns of Goll; in fact, in most cases the lesion in the cervical region exactly resembles an "ascending degeneration."

The accompanying figures were drawn with the camera lucida, and are exact representations of some of my sections shown at the December meeting of the Edinburgh Medico-Chirurgical Society. In the lower dorsal and upper lumbar regions the whole of the posterior columns were degenerated. In the cervical region the columns of Goll were alone diseased. Throughout the whole of the lumbar and dorsal regions the nerve-cells, both in the anterior and posterior cornua of gray matter, were markedly fatty. This is a point of some interest in connexion with the fact that the muscles of the lower extremities were much wasted.

Figure 2 is a transverse section in the lower lumbar region, slightly stained with perosmic acid, and mounted in Farrant's solution; magnifying power about 20 diameters. By comparing it with Figure 1, which is a transverse section of a healthy cord prepared in the same manner, it will be seen that the lesion (*i.e.*, the unstained portion) involves the greater part of the posterior columns. Those portions of the posterior columns which are adjacent to the posterior commissure are unaffected, *i.e.*, are deeply stained. (Perosmic acid stains the white columns deeply, the gray matter very slightly.)

Figure 3 is a section through the dorsal region, prepared in the same manner, magnified about 20 diameters. The lesion is more extensive than in the lower lumbar region.

Figure 5 is a section through the cervical region, the magnifying power and the mode of preparation being the same. The lesion is here confined (or almost so) to the columns of Goll, the root-zone columns being unaffected, *i.e.*, deeply stained.

Figure 4 is a longitudinal section through the posterior columns, highly magnified (250 diameters), stained with perosmic acid, cleared up with oil of cloves, and mounted in dammar. It shows the minute structure of the lesion. The nerve-tubes have almost entirely disappeared, their place being taken by delicate fibrous tissue. Scattered throughout the section there are numerous corpora amylacea. These bodies, which stain deeply with carmine and logwood, are only very slightly stained with perosmic acid.

It is still a moot point whether the lesion in locomotor ataxy consists of an actual increase of the fibrous tissue, with subsequent atrophy of the nerve-tubes from pressure, or whether the lesion does not commence in the nervous elements as an atrophy of the nerve-tubes, with shrinking of the parts, and only an apparent increase of the fibrous tissue.

ARTICLE V.—*On the Contagious Diseases Acts.* By FRANCIS CADELL, F.R.C.S.E., Lecturer on Syphilology, Edinburgh School of Medicine.

(Read before the Medico-Chirurgical Society of Edinburgh, 1st December 1880.)

IN examining the results of the working of the Contagious Diseases Acts I shall not touch upon the moral aspect of the question, as that is beyond the sphere of a medical paper, and shall only refer to the social bearings of the subject when these are directly connected with the increase or diminution of venereal disease.

It is also not my intention to go deeply into statistics, as, from the ease with which figures may be manipulated, it would bring an element of confusion into the discussion; and because, as I shall afterwards show, these statistics give no information at all upon the effects of the Acts in preventing constitutional syphilis, the only matter of real importance connected with the subject.

The motive of the Acts must be well known to every one, and consists in the compulsory and periodical examination of all registered prostitutes, and their detention in hospital when found diseased.

I shall now proceed to consider what in the working of these Acts is baneful and what is beneficial—for I think there is good as well as bad in them,—and afterwards draw my conclusions from the examination of both sides of the question.

The first thing to consider is the effect of the Acts on the number of prostitutes and brothels in the subjected districts. In whatever country these or similar Acts are in force, we see as the invariable result a diminution in the number of public prostitutes and the houses they frequent. This appears to me, however, anything but an unmixed good. The repression of these women through the working of the Acts does not mean that prostitution has lessened, or that the resulting disease has been reduced. It only means that the women who dislike the police regulations (and this dislike is almost universal) have either left the district or become clandestine prostitutes. Any one who has visited the large cities of the Continent, Paris, Vienna, or Berlin, could not fail to notice the tremendous extent to which clandestine prostitution prevails, and it is hardly necessary to quote the opinion of the Prefect of Police of the Hague on the subject. He was asked, "At what figure do you estimate the number of the clandestine prostitutes?" He answered, "They are not be estimated; they are continually increasing." With reference to the amount of venereal disease to be seen in continental cities where prostitution is under police regulation, I can speak decidedly from observation, long-continued, in Vienna and Lyons, and do not hesitate to state that venereal disease in all its forms was much more prevalent in these two cities than here in Edinburgh.

We have had a taste of repressive legislation as applied to brothels in this city by means of the "Edinburgh Municipal and Policė Act, 1879." The brothels, which formerly were confined to special districts of the town, have been shut up, and the prostitutes who lodged in them have been scattered broadcast in ones and twos over the town and suburbs, to find accommodation for themselves in hitherto respectable localities. The effect of such short-sighted legislation can only be to increase prostitution, disease, and demoralization.

We now come to the strictly medical aspects of the subject, and we are met at once by the question, What surgeon, however skilful and careful, can certify that a prostitute is sound? No one could tell from examination what form of vaginal or uterine discharge is innocent and could not produce a gonorrhœa; or, again, a woman suffering from secondary syphilis, but without external manifestations, might after careful ablutions pass the medical officer as sound, and yet a few hours afterwards communicate syphilis to any one having connexion with her. From these considerations it will be seen how many possibilities of error exist in the very essence of the Acts. The effect of the Acts in preventing the three forms of venereal disease, gonorrhœa, the local ulcer or soft chancre, and syphilis, must be our next consideration.

Before inquiring into the preventive power of the Acts as regards gonorrhœa, it is necessary shortly to give a description of what is known of the etiology of the disease. Gonorrhœa, I believe, frequently results frcm other causes than contagion; that is to say, that a man may get the clap from a woman who is quite free from the disease herself. I shall quote a passage from Dr Bumstead's work on venereal diseases in support of this statement. He says, "Of one thing I am *absolutely certain*, that gonorrhœa in the male may proceed from intercourse with a woman with whom coitus has for months, or even years, been practised with safety, and this, too, without any change in the condition of her genital organs perceptible upon the most minute examination with the speculum. I am constantly meeting with cases in which one or more men have cohabited with impunity with a woman both before and after the time when she has occasioned gonorrhœa in another person; or, less frequently, in which the same man, after visiting a woman for a long period with safety, is attacked with gonorrhœa without any disease appearing in her, and after recovery resumes his intercourse with her and experiences no further trouble. The frequency of such cases leaves no doubt in my mind that gonorrhœa is often due to accidental causes, and not to direct contagion." If this view of the causes of gonorrhœa is accepted, it will explain the total failure of the Acts in lessening the number of cases of this disease. In the home and Mediterranean navy there had been a remarkable increase of the disease between the years 1866 and 1875. This is accounted for in the Navy Report, 1874, in the following manner:—*That there has been no increase of gonorrhœa at all, and that the apparent increase to nearly treble its amount, both in the home and Mediterranean navy, is simply due to the medical officers having been desired by the Admiralty to record their gonorrhœal cases more regularly than formerly.* If this be the correct explanation of the extraordinary increase of gonorrhœa alluded to, it only tends to show the lamentable inexactness of the official records on the subject. It is quite possible, however, that the Acts might account for a small increase in the ratio of gonorrhœal cases by the mechanical irritation caused by the periodical examinations with the speculum, assisted by the irritating injections and other means used by the women themselves in order to appear healthy at the time of examination, and so increasing the ordinary causes of gonorrhœal infection. Gonorrhœa is not the trifling disease many suppose, and accounts for a great deal of that loss of service in the army and navy to prevent which these Acts were instituted. In fact, during its acute stage I should say that gonorrhœa was more likely to interfere with a soldier's active duty than syphilis itself. It seems to me that the impotency of the Acts to prevent gonorrhœa takes away one reason for their existence.

As regards the second variety of venereal disease, the soft chancre or local sore, which is not followed by constitutional symptoms, I should expect the Acts to have a very decided beneficial effect. This form of sore is rapid in its action and painful in its progress, and could be readily detected even by a cursory examination. The ratio of so-called primary sores per 1000 of strength of the forces was, between the years 1874–78, in 14 stations under the Acts, 37, as against 94 in 14 stations not under the Acts.

With reference to the effects of the Acts in preventing syphilis, the only disease for which legislation could be considered necessary, we are left without any correct statistical information on which to base an opinion. In the army reports the two forms of sores, the syphilitic and non-syphilitic, are placed together in one class, and there is no record at all of cases of secondary syphilis, so that the statistics are utterly valueless so far as syphilis is concerned. This being so, all that can be done at present is to try to come to some conclusion as to the probable effect of these Acts in preventing the spread of syphilis. It is therefore necessary to consider shortly what is the nature of the disease.

Unlike the soft chancre, the primary lesion of syphilis is insidious and slow in its action, and most frequently painless in its progress, and thus in its early stage might be readily overlooked during an ordinary examination with the speculum. Primary syphilis is merely the first local intimation of the contamination of the constitution by a poison whose contagious properties remain in the blood for a period which may be roughly fixed at two years. This poison is extremely subtle, and may often lurk in the discharges of a woman who to all outward appearances is perfectly healthy. And it may be confidently affirmed that many cases of syphilis must pass through the hands of the examining medical officer, be certified as healthy, and still within a short time infect others with syphilis. In order to prevent a syphilitic woman from spreading the disease it would be necessary to imprison her for at least eighteen months. And even if a government could be persuaded to enact such thoroughgoing sanitary legislation, and a people found willing to pay for it, syphilis would not be appreciably diminished. Clandestine prostitutes would take the place of the imprisoned public ones, and of course men would continue to spread the disease as before. To try to stamp out syphilis, or even lessen the amount of it, by legislation of this one-sided and unscientific character, can only end in failure and disappointment, and bring discredit on the medical profession who so largely countenance the continuance of these Acts.

A word, in passing, about hereditary syphilis, a disease which has been made too much of by the supporters of these Acts to strengthen their position. A famous surgeon once made an observation on this subject which was so universally accepted as true that it was dignified by the name of "Colles' Law." The law is, that no mother ever got infected from her syphilitic infant; which simply means that all mothers of syphilitic infants were infected before the birth of their children. There are only two ways by which a wife can receive syphilis from her husband—1st, directly by contagion; or, 2d, indirectly from him by the spermatic germ infecting the fœtus, and through the fœtus herself. Now we know positively that the blood during the primary and secondary stages of syphilis is contagious; but we have no evidence to prove that the physiological secretions—of which the semen is one—are contagious. Therefore it is much more likely that the mother of a syphilitic infant becomes directly infected by her husband, either by syphilitic secretions, or, these being wanting, by the blood itself from an abraded surface during the intimate sexual relations of married life. In this way so-called hereditary syphilis may be considered merely as syphilis in the fœtus caused by direct contagion from the mother at the time of conception or during pregnancy. The deduction I draw therefrom is, that if syphilitic men were to avoid procreating children until three or four years had passed since their infection, it would have an infinitely greater effect in lessening congenital syphilis than any amount of stringent legislation on the lines of the present Acts.

I must now refer to one benefit that has resulted from the introduction of the Contagious Diseases Acts, and that is the provision of extensive hospital accommodation for venereal diseases. Private charity is not to be depended on to supply this needed want ; and although the Royal Infirmary here sets apart sixteen beds for venereal cases, the supply is miserably inadequate.

There ought to be a lock hospital in every large town, the direction of which should be quite separate from that of the ordinary hospital. The importance of this is seen in the history of the Edinburgh Lock Hospital. Whenever its management was merged in that of the general hospital, it is notorious that the interests of the lock wards ceased to be so carefully guarded.

There can be no doubt that soldiers and sailors in the subjected districts benefit somewhat in their health from the working of these Acts. They consort with the lowest class of prostitutes, which is the class of women who most willingly remain under the Acts. But what is gain in health to the soldiers and sailors is a loss to the civil population, as the latter are the chief sufferers from the increased amount of clandestine prostitution which invariably follows repressive legislation. The conclusions I would draw from a careful consideration of this subject, are :—

1st, That syphilis is not a sufficiently serious disease to require any special legislation; and even granting that legislation were necessary, that these Acts, on account of their one-sided and unscientific character, are not fitted to grapple successfully with such a subtle disease as syphilis.

2d, The Acts do not lessen the amount of gonorrhœa in the army and navy.

3d, They have a beneficial effect in preventing non-syphilitic sores in the army and navy.

4th, The Acts give too much power to the police, and are therefore tyrannical.

5th, They reduce the number of public prostitutes, thus tending to increase clandestine prostitution, and as a consequence disease, amongst the civil population.

ARTICLE VI.—*Auditory Vertigo.* By P. M'BRIDE, M.B., F.R.C.P.E.

IT is due to the memory of the great French physician Menière to state that he was the first to draw attention to the connexion between lesions of the semicircular canals and vertigo in the human subject. What he described were attacks of vertigo, faintness, nausea, and vomiting, associated with more or less deafness. In one of these cases, where a post-mortem examination was made, a hæmorrhage into the semicircular canals was found.

Now, if the name of Menière's disease were confined to that pathological condition which was described by Menière himself, there could be no objection to the term. If, indeed, it were limited to primary lesions of the labyrinth, little could be said against it, for we do not yet know enough of the pathology of such conditions to warrant an attempt to differentiate them during life—if, perhaps, we except syphilis; but it is at best a doubtful exception, and one based on the principle that it is right to give the patient every chance of treatment in our power.

What may fairly be objected to is the application of the name, Menière's disease, to every case where a deaf patient happens to be giddy. If it be desired to perpetuate the name, by all means let us speak of Menière's symptoms; but, for the sake of medical science, let us cease to group cases, curable and incurable, in the same category, and attempt to conceal confusion under a euphonious name.

To return to our point, if, as is perhaps too frequently done, every case of deafness and vertigo be diagnosed as Menière's disease, and no attempt be made to get at the etiology of the giddiness, or to localise the deafness in the external, middle, or internal ear, surely in many cases an erroneous diagnosis must be arrived at. Suppose, for instance, a patient's complaint be of vertigo, deafness, and tinnitus, with occasional attacks of vomiting, the case may be one of lesion of any portion of the auditory apparatus, and auditory vertigo resulting therefrom. It may also, however, be one of intracranial tumour, and coincident deafness from that or some other cause. Then, again, if the subject of attacks of stomach vertigo be deaf, are we on that account to call the case one of Menière's disease and leave it alone, when perhaps an alkali in a bitter infusion would do much to alleviate one at least of the distressing symptoms?

Let us rather, in cases of vertigo accompanied by deafness, make an intelligent examination of the ear, and if we come to the conclusion that it is the exciting cause of the giddiness, call our case auditory vertigo, or, if we prefer it, one presenting Menière's symptoms. Let the name of Menière's disease, however, be confined to actual lesions of the labyrinth, which are rare, and not to be met with every day even in our largest hospitals.

Ever since Flourens made his experiments on the semicircular canals, there has been little doubt that irritation applied to them produces the sensation of vertigo. The ampullar ends of these organs have projecting into their lumen delicate hair-like processes bathed by endolymph, which are the terminations of the ampullar portion of the auditory nerve.

Before going further let us glance rapidly at the anatomy of the ear. The external auditory meatus is terminated by the membrana tympani. Into this is fixed the handle of the malleus, which by its head articulates with the incus, the latter being again connected with the stapes, as well as with the posterior wall of the tympanum. The stapes is fixed into the fenestra ovalis, and by its movements produces alterations in tension of the fluid of the whole labyrinth.

We are now prepared to enter into a discussion of auditory vertigo according to its etiology. We may, for the sake of convenience, subdivide it according as it is produced by changes in (1) The external, (2) The middle, and (3) The internal ear.

AUDITORY VERTIGO FROM CHANGES IN THE EXTERNAL EAR.

External auditory vertigo may be produced by any foreign body in the meatus if only it press with sufficient force on the drumhead. Such pressure will, through the chain of ossicles, act upon the fluid of the labyrinth, and produce there a change of tension far beyond what it is made to bear with impunity, resulting in giddiness and tinnitus, the former symptom probably being due to irritation of the canals, and the latter to the cochlea.

Of course, by far the most common foreign body met with in the meatus is cerumen or ear wax. It may not be generally known that the deafness caused by wax is usually to be recognised by its sudden advent after water getting into the ear in washing, shaking in a railway carriage, picking the ear, or some other similar cause, even before the offending substance is seen by the speculum. The reason for this is not far to seek. A very large piece of wax may remain in the ear for a long time, and produce no symptoms as long as there is the smallest chink to admit waves of sound to the membrane. From some physical cause or other the mass becomes moved, the air space closed, and deafness results, often quite suddenly. In some few cases pressure may at the same moment be caused on the tympanic membrane by the foreign body, and intense vertigo result, as in a very interesting case recorded by Von Troeltsch, where a man became suddenly deaf after a fall, and at the same time was attacked with vertigo. He was treated during months for cerebral disease, after which Von Troeltsch removed the offending plugs of wax and restored the patient to health.

My own small experience would incline me to believe that such aggravated vertigo from this cause is rare, but that slight giddiness is not at all unusual. What has been said of cerumen applies equally to accumulations of other kinds, as met with in eczema, otitis parasitica, etc. A very aggravated form of auditory vertigo is sometimes produced by forcible syringing, especially if the water be too cold and is forced directly against the drumhead. This fact should be remembered by those who are in the habit of syringing ears, "to see if there is any wax," rather than trusting to the speculum.

AUDITORY VERTIGO FROM MIDDLE-EAR DISEASE.

This I should be inclined to consider as the most common form of auditory vertigo. In this statement I am borne out by Guye, who, in an essay on Menière's disease, states that catarrh of the middle ear was met with in most of his cases. Not unfrequently

the middle-ear mischief has, by remaining unchecked, involved the labyrinth secondarily, or adhesions have been formed in the tympanum which could only be relieved by operations that are at present looked upon in this country as too heroic to be often attempted, and the affection persists. Sometimes, on the other hand, we may apply treatment with great effect; as, for example, in the following case, which I had an opportunity of seeing and treating through the kindness of Professor Grainger Stewart:—

W. H., æt. 58, complained of giddiness and staggering. He is a blacksmith by trade, and exposed to sudden changes of temperature; and to this he attributes, in a great measure, his illness. For five years his hearing has been getting gradually worse.

Before the patient applied for advice he had two very severe paroxysms of vertigo, with an interval of two days between them. What occurred on these two occasions seems to have been that the patient felt intensely giddy, heard noises in his head, and lost consciousness. This happened for the first time on a public thoroughfare, and when he recovered his senses he found himself seated and being attended to by bystanders. He then felt sick, and everything round him seemed to turn (direction not observed). He staggered home, and when he got there vomited and fell asleep. On awaking he felt better, and next day went to work, feeling well. On the day following, however, he had a repetition of the attack. Since then patient has been troubled with constant giddiness and staggering towards the left. A mixture of iodide and bromide of potassium seemed to have little or no effect on the symptoms. Except for the giddiness and staggering, the patient seemed in good health.

The examination of the ears gave the following results:—

Watch (normally heard at 30 inches) not heard in contact with either auricle. Conversation is, however, fairly well heard, and the tuning-fork is well heard in both ears by bone conduction.

Tympanic Membranes.—Right membrane opaque, with vascular injection along the handle of the malleus. Anteriorly and superiorly there is a dark atrophic patch. Left membrane indrawn, with well-marked folds.

Politzer's method only succeeded in forcing air into the left tympanum. After this, inspection showed the corresponding membrane flattened out, the folds having disappeared. Air could only be driven into the right middle ear through the Eustachian catheter, and auscultation during the process revealed a distant gurgle, indicating probably an accumulation of mucus in the pharyngeal orifice of the right Eustachian tube.

On the first attempt to inflate the tympana by Politzer's method, a very extraordinary effect was produced. As stated, air only entered the left middle ear; but whereas before the operation the patient had great difficulty in standing and walking, even with assistance, after the inflation he declared himself greatly relieved, and was able to walk about alone and unsupported. The subsequent treatment consisted in astringent applications to the throat and nasopharynx, which were in a catarrhal state, inflation of iodised steam into the tympana, and occasional use of the air-bag and Eustachian catheter. The result of this treatment was that in a week or two the only symptom of vertigo left was that looking down suddenly produced slight giddiness. The hearing also improved considerably; that is, he could hear a watch which was previously altogether inaudible on the right side in contact with the auricle, and on the left just off the ear. The tinnitus also from which he suffered was much relieved.

Now this case is perfectly typical of what is often known as Menière's disease in an aggravated form. The vertigo, tinnitus, vomiting, and loss of consciousness—a symptom which will be again alluded to—were all well marked.

The deafness, however, was most distinctly traceable to chronic middle-ear catarrh pure and simple. There was no organic mischief in the cochlea as shown by the tuning-fork test, nor in the semicircular canals as proved by the success of local treatment directed to the middle ear. Moreover, we could trace the nervous phenomena to deficient ventilation of the left tympanum, for whenever air entered it there was an immediate and marked improvement. It was on that side, too, that there was most evidence of altered intra-tympanal tension in the appearance of the drumhead, and we have before seen that changes of tension in the tympanum produce a more or less corresponding alteration in the endolymph.

The case is important as one showing the most marked and aggravated characteristics of Menière's disease, depending upon a curable condition of the middle ear—curable, be it observed, not by empirical inunction of iodine and application of blisters, but by rational treatment directed to a recognised pathological condition. I have seen a considerable number of cases where staggering and giddiness depended upon middle-ear lesions of various kinds, but none so severe as in this case.

AUDITORY VERTIGO FROM INTERNAL-EAR LESIONS.

This, as a primary affection, is not, I believe, nearly such a common condition as the preceding form of auditory vertigo. There can, however, be little doubt that occasionally one meets with cases where a previously healthy ear is attacked with tinnitus and gradually increasing deafness, and at the same time the well-known symptoms described by Menière set in—vertigo with faintness, nausea, and vomiting, one or all. According to some authors, even when the affected ear can hear aerial vibrations, it fails to perceive waves of sound conducted through the cranial bones.

It would seem that many of these internal ear cases are secondary to old standing tympanic disease; and as there is an anastomosis between the tympanum and labyrinth, it is not difficult to conceive that long-standing disease of the former might produce in the latter a tendency to take on morbid action. Whether many of the so-called cases of otitis labyrinthica, or primary inflammation of the membranous labyrinth, may not be in reality sporadic cases of mild cerebro-spinal meningitis, I cannot take upon myself to say.

The diagnosis of affection of the labyrinth occurring in a previously healthy ear is not difficult. The characteristic symptoms occurring suddenly, the absence of any history of former deafness or tinnitus, impaired bone conduction, with absence of signs of middle-ear disease, all point to the internal ear as at fault. Deafness is, however, not always an early symptom, and may, according to Ferrier, be absent, at least deafness for sounds conducted through the air. Where this symptom is wanting, its absence undoubtedly renders the case more difficult of diagnosis.

When organic lesion of the labyrinth is rendered probable by the tuning-fork test and by the presence of Menière's symptoms in a case of chronic middle-ear catarrh, care should be exercised in arriving at a diagnosis, if (from the appearance of the drumhead, auscultatory phenomena, etc.) there be any reason to believe that the latter is causing increased intra-labyrinthine tension. It is still a very doubtful point how far this condition (increased tension) may, by preventing perosseal audition, simulate organic disease. In all such cases the effect of the air-douche would furnish assistance in arriving at a conclusion. (See Report of the meeting of the American Otological Society, 21st July 1880.)

The subject of primary organic disease of the semicircular canals is at present in its infancy; but this much is certain, that it is a much rarer condition than is generally supposed, except in some parts of the Continent, where it is said principally to attack children, and may, as suggested by Gottstein, be an abortive form of cerebro-spinal fever. It is not a fatal disease, and consequently its pathology is not well understood.

Before concluding the subject of auditory vertigo, I propose to take up one or two points in its symptomatology. To go over the whole train of Menière's symptoms would be merely attempting to do what has been better done before

The use of the tuning-fork in diagnosis is now, I believe, pretty generally understood by physicians. There is, however, one fact which is worth bearing in mind. Experience has shown that after the age of fifty bone conduction is often impaired or absent. This is attributed by some authors (Politzer) to senile degeneration of the auditory nerve, by others to changes occurring in the cranial bones.

The combination of symptoms in auditory vertigo is generally as follows:—In a mild case we may have vertigo, acute or chronic, without any other symptom. In more severe forms, faintness, nausea, vomiting, and even unconsciousness, may occur.

Loss of consciousness is generally spoken of by writers on medicine as a symptom of Menière's disease which is conspicuous by its absence. It does, however, sometimes result from auditory vertigo; as, for instance, in the case which is given at length in this paper. O. B. Bull in an essay on Menière's symptoms also speaks of loss of consciousness as being not unfrequently met with, and is inclined to ascribe the symptom in question to the psychic effect of the alarming sensations experienced by the patient, or else to vaso-motor changes produced reflexly through the auditory nerve. I am inclined to suggest a somewhat different explanation. The nerves of the semicircular canals we may assume to be in direct communication with a central brain area, which when stimulated gives rise to the sensation of vertigo. For reasons given elsewhere, it seems not improbable that a stimulus applied to this centre is very apt to overflow and involve the vomiting and cardiac inhibitory centres. That the two last named are in intimate relation is rendered probable by the frequent concomitance of nausea and faintness. Given then a strong enough stimulus to the cardiac inhibitory centre, and we have syncope produced, and by it unconsciousness. This, I take it, is the way in which loss of consciousness generally results from Menière's disease, or auditory vertigo, although it cannot be denied that vaso-motor spasm may lead to the same result.

A very interesting point in connexion with our subject is what may be called the motor phenomena of auditory vertigo. These may be studied either in the sensations of the sufferer, or in the effect they have on his equilibriation. A true vertigo consists of the subjective sensation of movement referred either to the sufferer's own body or to surrounding objects. Now if the direction of this apparent motion could be accurately ascertained in a number of cases, and connected with exact notes of the morbid condition producing the symptom, much might be gained. To a certain extent this has been done by Guye and Gowers. The objections to this method are that patients, either from deficient powers of observation or carelessness, are often not to be relied upon for accurate data; and granting that we sometimes meet with people intelligent enough to be trusted, one is apt to get confused by the apparent rotation being sometimes referred to the person himself, sometimes to surrounding objects.

A simpler method of proceeding is to observe the effects of the vertigo. Vertigo cannot exist for any length of time without producing a tendency to fall or stagger. This is very generally in the subject of auditory vertigo towards the same side throughout, and is capable of being easily demonstrated. In a few cases in which I have been able to make absolutely certain of which ear produced the symptom, the direction of staggering was always towards the affected side; but I do not feel inclined to generalize from a few cases, more especially as instances have been reported by others where the direction of falling was to the healthy side.[1]

It will be obvious to the reader that the symptoms of auditory vertigo present a very striking analogy to those present in some cases of cerebellar disease. Nor is this to be wondered at when we compare what is known of the physiology of the two organs. Indeed, recent observations (Gellé, Stefani, and Weiss) would almost warrant one in concluding that the semicircular canals are peripheral organs whose afferent nerves terminate in the cerebellum. Urbantschitsch, in his text-book on *Ear Disease* (p. 512), says that we must bear in mind that reflex cerebellar phenomena may be called into action through ear disease. Many facts seem to point to this probability, and to the fact that in not a few of such cases the ampullar nerves are the afferent channels. If this view be correct, then auditory vertigo is a cerebellar reflex phenomenon.

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[1] It seems possible to account for some of these discrepancies by assuming that some patients yield to the tendency to stagger, while others, by attempting to resist it, lean too much towards the opposite side.

Part Second.

REVIEWS.

Contributions to Obstetrics and Gynecology. By ALEXANDER RUSSELL SIMPSON, M.D., Professor of Medicine and Midwifery and the Diseases of Women and Children in the University of Edinburgh. Edinburgh: Adam & Charles Black: 1880. Pp. 347.

THIS work consists of a collection of the various papers published by the author during the last twenty years in the medical journals, arranged under particular headings, and subjected to revision. They are consequently found to be of very unequal merit, the earlier productions of the author being scattered throughout his more matured papers. The first part of the work is devoted to the consideration of obstetrical subjects, the latter to diseases of women.

The first paper in the work is entitled "Emmenologia," and contains a brief but exceedingly well put *résumé* of the more important facts connected with menstruation at the various periods of life. In this article the author, rather rashly, as appears to us, expresses a decided leaning towards the peculiar views of ovulation advocated by Lowendhardt, Kundrat, Williams, etc. Several short papers follow on intra-uterine and congenital conditions of the fœtus, the more important being those on congenital goitre and on hydronephrosis, which are accompanied by records of cases. Dr Simpson thinks, from his own observation, that hydronephrosis is not infrequently the result of obstruction caused by the folding upon itself of the ureter, probably as the result of a limited peritonitis.

A short paper devoted to the placenta is introduced, with a note upon dimidiate placenta, and is followed by the record of two cases of placenta prævia in primiparæ, one of which was observed by the author and the other by Dr Hart. Some interesting remarks on the probable reason why the accident is so much rarer comparatively in primiparous than in multiparous cases, its special fatality in them, and the peculiarity of the third stage in placenta prævia, are then given. The author, with some warmth, supports the utility of the treatment by partial separation of the placenta, as recommended by Sir James Y. Simpson and Dr Barnes, as a means of arresting bleeding. It occurs to us, however, that his argument founded upon bleeding continuing from vessels when partially torn, and ceasing when they are completely divided, when applied to the placenta, is very like attempting to cut the end off a stick. It is very doubtful whether, when a portion of the placenta is torn off completely by an operator, a fresh portion of vessels is not partially opened into at the same time. In that case, where can the gain be? It looks well on paper to speak of the placenta being made up of independent cotyledons, as demonstrated by anatomists, but how can an obstetrician follow out the limits of these cotyledons in his efforts of separation, even granting that such separation would be useful if he could? Would he not certainly open up fresh cotyledons at every effort to obliterate others? We agree with the author that every case of placenta prævia needs special consideration in regard to its treatment, and that the treatment even frequently needs to be altered at different steps of the same case; we are also glad to agree with him when he states that most efficient aid to delivery in such cases is derived from the early use of Barnes's indiarubber dilators. But the more we see and know of this complication, the more we feel assured that all attempts at partial separation are worse than useless, and that complete separation is an operation which no imaginable circumstances could warrant. For if it is possible to separate the whole placenta, it is possible to deliver by turning without doing so; and if there is not room to deliver by turning, it is simply idle to talk of being able to separate the placenta completely. It cannot be done.

In post-partum hæmorrhage Professor Simpson regards the perchloride of iron as a useful remedy in certain cases.

Under the heading, "Morbid Conditions of Pregnancy," we find paper on hydramnios and on extra-uterine pregnancy; but these hardly appear to require comment. An interesting case of fatal chorea gravidarum, which occurred in the practice of Dr Longmuir of Bathgate, is then recorded by the author. The patient was a primipara, and died in the fifth month of utero-gestation. The convulsive movements were, as usual, bilateral. This chapter ends with a statement of the author's views regarding the treatment of abortion. The chief point in it is a plea for the use of the volsella to depress the uterus in abortion cases, which fails to commend itself to us as either necessary or specially safe in such cases.

Under the title "Head-flexion in Labour" a case is recorded in which the author endeavours to substantiate in their entirety the views of Lahs of Marburg, not only on that subject, but on the theory of delivery in general. In introducing the subject to his readers, the author somewhat spoils the effect of the paper by referring with unwarranted acerbity to the opinions of those who explain the position of the fœtus in utero chiefly as the effect of gravitation. In this matter, though we have carefully read all that Lahs has to say on the subject, and most of the French opinions, such as Pinard's, referred to by the author, we feel convinced that nothing which has been advanced materially weakens the position that gravitation is one of the essential elements in determining the position of the fœtus in utero. Before this theory can be proved a "ghost," we think Newton's laws must be proved incorrect, and the principles of flotation in fluids depending upon them would need to be also altered. But as that is not a result likely to be speedily accomplished, we think it better to adhere to the old view in the meantime. This is the position taken up by the best German authorities, such as Spiegelberg, Schrœder, etc.

It is not astonishing that the French school strive to maintain the theory of accommodation, as it was with them that the theory of small volitions originated, which the late Sir James Simpson improved upon by explaining the results by reference to the doctrine of reflex action. We have failed to get hold of Martel's paper referred to by Professor Simpson; but it certainly does not appear to us that his reference to Hubert's work is altogether warranted. On referring to that author we find that the ordinary stock arguments against the gravitation theory, which have been again and again refuted, are advanced as though they were impregnable. But this author only argues against gravitation being the only agent in determining the position of the fœtus in utero. In proof of this assertion we beg to refer our readers to pages 63 and 64, vol. i., of Hubert's *Cours d'Accouchement.*

Lahs we regard to be rather fond of proving too much. Like some other excellent workers, he seems to proceed as if everybody was in the wrong who wrote upon the theory of labour till he chanced to come upon the scene. His assumptions as to the relative diversity between the fœtus and liquor amnii are very loose to begin with. The liquor amnii, as every one knows or should know, is of very varying density, and is frequently of quite as high a specific gravity as the fœtus. In that case, if the quantity of liquor amnii is relatively considerable, it is inconsequent to argue that the fœtus could rest, by any process of accommodation or other arrangement, out of that position which gravity determines for it.

In respect to head-flexion Dr Simpson adopts, as already stated, the views enunciated by Lahs. Indeed, the paper, so far as the causation of head-flexion is concerned, is merely an attempt to apply Lahs's views to a particular case. Lahs, throughout his *Theorie der Geburt,* maintains that the expulsive power of the uterus is always directed to the establishment of a uniform general internal pressure, and consequently denies that even in the second stage there exists a fœtal axis pressure, or oval interpolar pressure, distinct from the general contents pressure. In this position he differs from most authorities on the mechanism of parturition. Setting out with this assumption, he endeavours to account for the various phenomena in the passage of the fœtal head through the cervix and pelvis by the effect of this uniform general contents pressure acting on the fœtus before or after the escape of the waters, assuming the fœtus to be practically a viscous mass. He accordingly maintains that the resultant of the uterine forces is always expended upon the plane that is bounded by the line of contact of the presenting part with the dilating os or vagina. This plane Lahs calls the plane of the girdle of contact. The effective force of the uterus, he maintains, must always act perpendicularly to this plane, and with equal intensity on every part of it. It has been usually held that the pressure is more intense along the line of the dorsal spine of the child, as that is the more resistant part of its body.

Lahs further maintains that the presenting part lying in this girdle of contact, if wedge-shaped as the head is, will, when pushed through the dilating cervix during a pain, be caught by this girdle of contact in such a manner as to compel the occiput to descend faster than the forehead. For, with equal displacement of the line of contact of head with dilating os, the occipital end of the head, having a steeper slope, will of necessity make greater perpendicular advance through this girdle of contact than the frontal end of the head, which has the longer slope. As he assumes that the effective force of the uterus is always perpendicular to the girdle of contact, after each advance of the head as a whole the uterine force becomes more and more favourable for producing head-flexion. The elastic force of the soft parts forming the girdle of contact, as the pain passes off, have also a certain effect in causing and maintaining the head-flexion. He also allows the difference between the weight of the fœtus and the weight of an equal bulk of liquor amnii as a force acting along the spine of the child which may augment or diminish head-flexion. It would augment it if the patient is placed so as to put the fundus above the level of the girdle of contact. It would diminish it if the fundus uteri were below the level of that girdle. The direction in which the head will move is to be determined, according to Lahs, by drawing two tangents to the head at two opposite points of the girdle of contact, and two parallels to the direction of the uterine action at the same points. These lines are, of course, to be drawn in the same plane. The tangential lines make, of course, an angle each with the direction of the uterine force. According to Lahs, the end of the diameter whose tangent makes the smaller angle with the direction of the uterine force will always descend faster than the end whose tangent makes the greater angle with that direction.

Now, while granting that the shape of the head and the resistance of the soft parts have possibly not received the amount of attention they deserve, and that the views of Lahs are original and highly suggestive, we are far from believing that the state of matters is so simple as he puts it. In the first place, we do not believe with Lahs that in determining the action of the expulsive powers of labour we can neglect the fœtal axis pressure in the second stage, during which, moreover, the flexion movement is chiefly developed. Besides this, Lahs appears to us to err in taking little or no account of the effect of the osseous pelvis, and explaining all the mechanism with reference to the soft parts alone. Besides, he assumes that the girdle of contact is always subject to uniform dilatation, which is not necessarily the case, and yet unequal dilatation of it would alter the rate of descent of the wedge-shaped head. The case recorded by Professor Simpson is favourable to the view taken, as the fœtus, being so immature, could certainly be squeezed through the dilating rigid os as a molluscous mass. But surely it is not safe to argue from the pathological to the physiological, as is done in this instance.

Again, the moulding associated with delivery must of necessity seriously alter the shape of the fœtal head, and would, one would expect, lead to much more frequent derangement in the flexion movement than really takes place if the slope of the wedge-shaped head were all that determined this phenomenon.

The friction, also, of the various surfaces of the head upon the pelvic tissues cannot be inconsiderable, and must have a decided effect in modifying the development of such a phenomenon as the flexion movement. In his mechanism Lahs appears to take no account of this. It is true that factor cannot be great until after the membranes have ruptured; but in the passage of the head through the pelvis it must be usually very considerable and important.

In fine, whilst we gladly admit that Lahs opens up a quite original view in regard to the mechanism of the various movements of the head in its passage through the pelvis, we cannot help thinking it is, after all, a very imperfect one, and that much careful investigation is still needed regarding the exact mechanical conditions involved in determining the various propulsions, resistances, rotations, and mouldings to which the fœtal head is subjected in its passage through the pelvis, before we can definitely accept or reject the doctrine propounded by him.

Such considerations as these compel us to believe that we must still look upon the greater pressure propagated along the dorsal spine of the child during the pains, and acting nearer the posterior than the anterior extremity of the fœtal head, as one of the most essential elements in the production of the flexion as well as of the rotation movement of the fœtal head. Much credit is due to Dr Simpson, however, for drawing the attention of British obstetricians to the investigations of Lahs upon the subject.

Under morbid conditions of labour, dorsal displacement of the arm as a cause of delay in delivery is discussed, as also the postural treatment of presentation of the funis, and the expression methods of delivering the placenta. Then follows an interesting case of rupture of the uterus, in which, apparently in consequence of disease of the uterine muscle, the rupture ran up from the cervix, along the left side of the organ, to within half an inch of the left Fallopian tube. This rare case forms a valuable contribution to the literature of this subject.

The management of delivery in uniformly contracted and flat pelves recommended by the author is the usually accepted method of forceps in the former and turning in the latter. The reasons for these proceedings are well given. But we think the illustrative cases are so imperfectly recorded as to be totally useless in throwing any fresh light upon the doctrines meant to be supported. We desiderate in this connexion sadly any hints as to pelvimetry, so much needed by British obstetricians. How are practitioners to be expected to distinguish between such varieties when teachers indicate no points to guide them?

In the gynecological part of the work the best papers are those on sarcoma uteri and on the treatment of carcinoma of the cervix and body of the uterus, in which the advantage of radical and palliative operative treatment is insisted upon, and illustrated by appropriate cases. The treatment of fibroid tumours is also handled at considerable length.

A paper upon forms of sterility contains some curious writing.

The author's successful case of oöphorectomy is recorded in full, along with interesting observations upon the object of this operation, the indications for it, the results hitherto attained by it, and the methods recommended. We note that in a tabulated list of thirty-five cases mentioned in this paper it is stated that the results were as follow:—

Death in . .	13 cases.	Very good, . .	1 case.
No improvement, .	2 „	Fair, . . .	1 „
Good, . . .	8 „	Great improvement,	4 „
Somewhat improved,	2 „	Cured, . . .	4 „

Considering the many considerations that make the most conscientious operator put a *couleur de rose* on his results, this table certainly does not present the operation in a very favourable light.

Observations on a method of case-taking in gynecology are a useful contribution to the teaching of the subject, as it cannot fail to aid the student in mastering the first steps of this important subject.

The book terminates with a paper devoted to basilysis, in which a description of a peculiar form of perforator invented by the author to break up the bones of the base of the skull is given. The paper seems to have become dislocated from the obstetrical part of the work, to which it certainly belongs. It appears to us almost unnecessary to hunt after more of those disgusting instruments, seeing especially that the feeling of the profession, following the teaching of the late Sir James Simpson, is going so strongly against the operation of craniotomy, and settling more and more down in favour of substituting it by Cæsarean section, after the ordinary or the Porro method. Besides, it is difficult to see how a basilyst could be used without endangering the mother's parts by the risk of the point of the instrument perforating the bone of the skull and passing into the uterus.

The instrument suggested by the author is certainly a less lethal-looking weapon than that of Hubert, which suggested it, and we dare say could effect the purpose proposed, although not without risk to the patient. But we rather think the ordinary method of breaking down the skull and making the face present, in a specially narrow case, would be sufficient, and even safer for the patient.

The work contains a large number of well-executed engravings, which largely add to its value.

In bringing our remarks upon the volume to a close, we have to state that the work appears to us to suffer through containing too great a multiplicity of separate subjects. In consequence, many of them are treated in a manner that is too sketchy and fragmentary. Besides this, an attempt to systematize the subjects has led to mixing up contributions of very unequal merit, the products of the author's more mature thought and experience being thus jumbled together with his earlier efforts. Had Professor Simpson seen fit to exclude the shorter papers and fugitive contributions to society debates, and to restrict himself to half-a-dozen or so of the more important subjects treated of in the work, and had he at the same time taken pains to elaborate and work out these in some detail, we feel he would have produced a book more worthy of his undoubted ability and learning, and which would have done much more for the advancement of midwifery and gynecology.

Though we differ with the author in several of the positions maintained by him,—sometimes, we regret to notice, with what appears to us an undue acrimony towards his fellow-workers who happen to differ in view from him,—and have expressed our views frankly on these points, we nevertheless feel bound to state that the perusal of the work has afforded us much pleasure. It exhibits evidence of being the production of a well-stored, acute mind, possessed of decidedly critical ability. Furthermore, it gives evidence of continuous intellectual growth in its author, and of much energy and devotedness to the advancement of gynecological science. We recommend it strongly to the attention of our readers.

A Handbook on Diseases of the Skin, with especial reference to Diagnosis and Treatment. By ROBERT LIVEING, A.M. and M.D. Cantab., F.R.C.P. London, Physician to the Department for Diseases of the Skin at the Middlesex Hospital, etc. Second Edition, enlarged. London: Longmans, Green, & Co.: 1880.

Two years ago the first edition of this little work appeared, and already it has been republished in an amended and improved form. The book was sure to be popular, for it well supplied an acknowledged want, while it was written in an easy and attractive style. Its scope was then, however, too limited, for it dealt only with the discrimination of skin diseases; yet diagnosis is but the preliminary to treatment, and its author has acted wisely in conforming to the suggestions of some of his critics—ourselves among the number—in making it more complete by this addition. The book is one which contains much valuable information in a compact form. It is thoughtfully written, without evidence of hurry, and its sentences run smoothly and easily. Dr Liveing is a disciple, but not a slavish one, of Hebra and Jonathan Hutchinson, masters worthy of all imitation. Some of the chapters are valuable as intelligent criticisms of dubious and as yet scarcely settled questions. Such are the pages devoted to hydroa, to herpes gestationis, to ecthyma, and impetigo. Others are remarkably clear descriptions of common, though often puzzling, diseases, as urticaria, eczema, and prurigo. The article on eczema is particularly good, and could only have been written by one who had read largely, and had personally studied the subject with much care. In this edition, besides the treatment, the etiology of this disease is also noticed; and here some remarks are made which, if not altogether new, deserve careful attention, more especially those which relate to the constitutional causes of eczema. He regards as perhaps the most common internal cause "*an impaired digestion and imperfect assimilation of food.*" "It can hardly be doubted that the symmetrical character of eczema points to a constitutional origin; and whether we regard this as due to faulty innervation, impurity of the blood, to defective excretion, or to some other cause, we yet in all cases acknowledge some general defect in the system. But there is this important fact, which cannot be too strongly impressed on those who have to treat eczema, namely, that *an eruption, which at the outset was due to constitutional disturbance, often lasts long after that disturbance has subsided, and then becomes a strictly local affection, to be treated chiefly by local means.* As long as fresh crops of symmetrical eruptions continue to appear, we may be sure that some faulty condition of the system remains, and we must direct our especial attention to the internal treatment; but when the recurrence of new spots has ceased, we may with advantage adopt active local means of cure. In practice the two forms of treatment may often go on *pari passu* with advantage, but the distinctions I have pointed out should always be kept in mind." We have quoted this paragraph in full, since it seems to us to strike with much sharpness the key-note of the correct management of many cases of eczema. The section which succeeds this, on the treatment, leaves nothing to be desired. The directions are full, plain, and judicious. We must enter one protest, however. In acute eczema, Dr Liveing remarks "that it is sometimes advisable to administer a calomel and colocynth pill every night, followed by a saline draught in the morning. The most convenient purgative for children is a calomel lozenge." It is to this last sentence we demur. In the case of adults it may do little harm; indeed, we agree with Dr Liveing that it may sometimes be advantageous to continue, *for a time*, the nightly administration of calomel in small doses; but with children it is otherwise. As Dr Chambers long ago pointed out, mercurials are destructive, not constructive remedies, and their continued use during the period of growth (the case of syphilis excepted) must be hurtful. And there is another reason, a further development of this, which we learned the other day in conversation with a well-known physician of much acumen. The teeth of West-Indian-born persons do, or at least used to, drop out from a gradual recession of the gums without caries. This, our friend explained, was owing to the pernicious habit which West Indian practitioners had of administering small and repeated doses of mercurials to children and young persons as a supposed alterative or liver stimulant, or in West Indian fevers. If such is the case, we think that the exhibition of such a convenient but dangerous medicine as a calomel lozenge to children should be discouraged. Since the time of Horace, if not before it, shoemakers have often been the subjects of satire, no doubt very much from the painful corns which their tight or ill-fitting shoes had the reputation of occasioning. A ray of comfort which this much-abused race may employ to ease their consciences emanates from Dr Liveing, for he is of opinion that another element in the production of corns is probably small irregularities or exostoses on the bones of the foot, over which a corn will readily develop. An excellent chapter in this volume is the one which concludes it, dealing with therapeutics. We have here presented to us, first, a short description of those spas of Europe which are most easily accessible, and are of repute in the treatment of skin diseases. Notwithstanding its reputation, Dr Liveing has not found Aix-la-Chapelle so suitable for eczema as several other spas. And he adds, when speaking of Homburg, the useful hint that mineral laxative waters which owe their efficacy to chloride of sodium are not the best for cases of simple eczema. Hence, of the imported waters Pullna is better than Friedrichshall, and so is Hunyadi Janos. An admirably selected series of formulæ, and directions for artificial baths, suitably terminates the volume. Whoever reads this little work with care, and carries out the treatment recommended, will not be disappointed in the results obtained. One other feature of the work which much enhances its usefulness is that to the description of most of the diseases there is appended a list of the plates which best represent it.

Surgical Enquiries, including the Hastings Essay on Shock, the Treatment of Surgical Inflammations, and numerous Clinical Lectures. Second Edition. By FURNEAUX JORDAN, F.R.C.S., Surgeon to the Queen's Hospital. London: J. & A. Churchill: N. D.

WHEN, some years ago (Sept. 1874), this work in its first edition was noticed in our pages, we had much pleasure in pointing out the great originality, freshness, and practical character of Mr Furneaux Jordan's teaching. In this second edition, which practically is a new work, these characters will still be found exhibited in added material as the result of added experience. The Hastings Essay on Shock, and some most valuable instructions on the pathology and treatment of surgical inflammation, are prefixed to the more isolated clinical cases and lectures.

Some of the observations on shock, especially the thermometric ones, are very curious. One regarding the sudden fall of temperature observed at the moment of sawing the bone in great amputations would require further verification, but, if it is fact, is a most inexplicable one.

Royat (les bains) in Auvergne; its Mineral Waters and Climate. By G. H. BRANDT, M.D. London: H. K. Lewis: 1880.

THIS little work is introduced by a short, modest, commendatory preface by Dr J. Burney Yeo, F.R.C.P., who has spent some time at Royat and its neighbourhood. It has two great merits, brevity and condensation. It tells all that is really needed in twenty-nine pages; it presents an inviting view of the place, a railway map, and what appear to be trustworthy tables of the chemical analysis of the various springs. (It may here be noted that one of these springs contains a very appreciable quantity of arsenical salts).

The vicinity is distinctly volcanic, and peculiarly rich in interesting Roman remains, indicating that its health-restoring character was recognised and appreciated by that great people twenty centuries ago, during their occupation of Gaul.

Royat stands 1480 feet above the sea, in a beautiful valley surrounded on all sides except the east by mountains of various heights. The climate is temperate, dry, and bracing. The vegetation is conspicuous, abounding in fruits of all kinds and very superior in quality. Its roses are famous.

Dr Brandt does not fall into the common absurdity of averring that all diseases are benefited by the waters; but he speaks emphatically as to their efficacy in chronic arthritic affections, those particularly of the respiratory organs and of the skin. Every modern appliance seems to be made use of at the baths. The hotels are good; villas may be hired; there are great facilities for locomotion, and the place itself is of easy access by the railway from Paris to the Mediterranean. The journey may be accomplished in nine hours, including the two miles between the nearest station and Royat. We doubt not that, when better known, this pleasant locality will attract many visitors who have been disappointed elsewhere. The season lasts from the middle of June to far on in October; so that patients who contemplate wintering in the south of Europe may probably find Royat a convenient and suitable climate of transition from the less genial climate of Scotland.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LX.—MEETING II.

Wednesday, 1st December 1880.—Dr P. H. WATSON, *President, in the Chair.*

I. *Dr Brakenridge* showed TWO PATIENTS. The *first* was a man 43 years of age, who suffered from an aneurism of the transverse portion of the arch of the aorta. The tumour was situated in the upper sternal, suprasternal, and adjacent clavicular and infraclavicular regions. The interesting point in the case was, that the aneurismal sac had managed to press upon the innominate, the left common carotid, and left subclavian arteries, in such a manner that in all of these arteries, and in their branches, pulsation was quite abolished. Hence no pulsation could be felt on either side in the carotids, subclavians, brachials, radials, or ulnars. At the same time, while pulsation was thus abolished, there was abundant evidence that the circulation was fairly well carried on in all the districts supplied by these vessels. There were no cerebral symptoms. The face, hands, and arms were warm and well coloured; and when the return of blood through the veins was checked by pressure, they filled up rapidly. The pulsation in the femoral arteries was quite normal. The other pressure symptoms present were very slight. The *second* patient was a servant girl, 19 years of age. She was the subject of a peculiar and interesting cataleptic condition of the right forearm and hand, which had continued in the same state for nine and a half months. The first indication of nervous weakness in her constitution had manifested itself when she was a child. According to her mother's statement, vaccination had been followed by a weakness in the left arm, which was still present to some extent. Since her father's death about eleven years ago her mother had treated her with great cruelty. She was sent out to work in the fields when she was ten years old, and her diet consisted chiefly of tea and bread. This state of matters continued for seven and a half years, or until eighteen months before her admission, when she became general servant to a family in C——, where she again had work to do which she felt was too heavy for her. Her present illness had commenced eleven months before her admission into the Infirmary. She and another woman were carrying a tubful of clothes; the other woman fell, and to prevent the tub from falling on her companion, patient had strained her right side. She was able, however, to continue her work for a month before she sought medical advice. About six weeks after she had hurt her side she noticed that her right hand and forearm felt cold and swollen. Motion and sensation now began to disappear. A week later, the present condition had become established, and has persisted ever since. A week later still, her legs had become weak, and she could not walk. She was thus bedridden for five weeks. The paralysis of the legs then passed off. She was under treatment next for four months in the wards of one of my colleagues, without any decided result. She was a well-nourished, languid-looking girl, and suffered from violent headaches. The following characteristic symptoms of the cataleptic state were all present in the affected part, the right forearm and hand:—1. Well-developed muscles; 2. A degree of tension or rigidity of all the muscles; 3. The "flexibilitas cerea," or wax-like flexibility of the limb, in virtue of which the position of the fingers and wrist were readily altered by passive movement, and the new direction or position given them was retained, without pain or weariness, for an indefinite length of time; 4. The loss of all voluntary control over the movements of the affected part; 5. Complete loss of sensibility in all its forms below the elbow-joint; 6. Reaction of the muscles to electrical stimuli, but the position given to the fingers and wrist by the resulting muscular contractions not retained, as it was in the case of the modified positions resulting from passive movements. The features which distinguished the case from one of ordinary catalepsy were the following:—1. The cataleptic condition of the right forearm and hand was not associated with any true cataleptic attacks. 2. The condition had persisted for nine and a half months without any intermission or marked variation, although it had been noted to be less complete during sleep. 3. It was restricted to a very limited portion of the body. Dr Brakenridge believed this case clearly shown to be one of hysterical catalepsy by the following facts:—1st, The highly-coloured, and probably exaggerated, history of her domestic and other trials; 2d, The easily induced, various, and transient paralytic phenomena met with in other districts of the body; 3d, The patient's feeble mental condition. A decidedly favourable prognosis was therefore given.

II. *Dr James Ritchie*, in the unavoidable absence of *Professor Grainger Stewart*, showed a PATIENT who had been exhibited at several universities and medical schools, and was shown to the class of the practice of physic the previous day. The patient was a German by birth 42 years of age. When eight years old he had measles, and six months afterwards there had been observed over his lower jaw, on the left side, a yellowish spot, also a swelling under the lower jaw and in the upper part of the neck. This swelling lasted for fourteen weeks, and disappeared without suppuration. The other symptoms, which now exist, progressed for four years, after which the patient believes that the disease became arrested. The case is a typical one of hemiatrophia facialis, as described by Romberg, Eulenburg, and others. The vertical measurement of the left side of the face from the sagitta to the angle of the jaw, is half an inch less than that of the opposite side; from the middle of the forehead to the tragus measures three-quarters of an inch less on the left than on the right side; and from the chin to the angle of the jaw it is an inch and a half less on the diseased than on the sound side. The nasal, superior maxillary, and inferior maxillary bones are much smaller on the left than on the right side, but both malars and zygomatic processes seem to be of the same size. The hard palate is higher on the left than on the right side, and the arch of the palate is higher and further forward on the affected side. Not only are the bones affected, but also the muscles and skin. The muscles are wasted over the affected area, so much so that the left side of the tongue is quite atrophied, and when the organ is protruded it is deviated on the left side. Where the muscular substance remains it seems to be active. The colour of the skin is natural. It is in some parts glossy, and over the greater part of the affected area there is absence of hair. There are no abnormal sensations. The sensibility is rather more acute on the left side than on the healthy one. The sight of the left eye is impaired, the pupil rather larger than of the right eye, and there is absence of accommodation both for light and for distance: the optic disc is atrophied. The hearing of the left ear is imperfect. The intelligence is good, and the general health natural. Dr Ritchie regretted that Professor Stewart was not present, as he might have pointed out features of interest special to this case, but he might be allowed to remark that as in this man, so in fully two-thirds of the cases recorded, the left side was affected. He was not aware that in a single case of this disease the nerve-centres had been subjected to microscopical examination, but, in the absence of facts, analogy might be used to aid in the formation of our ideas of the pathology. In infantile spinal paralysis there occurs in some cases, if not atrophy, at least an arrest of development of the bones. The lesion in this affection is now known to be primarily one of the nerve-centres. In the patient now exhibited, as in other cases of hemiatrophia facialis in which the disease occurred before the bones had attained their full size, there was also an arrest of their development. This condition, in addition to other points of similarity between the two diseases, might aid our conception of a theory of its pathology.

Professor Gairdner of Glasgow mentioned that he had spent

some time in studying this very case in Glasgow, and had discovered that it was the identical one described in 1847 by Romberg, and Dr G. was able to make a series of comparative observations on it in relation to Romberg's account. Dr Gairdner mentioned that he had got a very successful photograph of the patient executed in Glasgow by Mr Annan, and also a cast of the hard palate, showing the characters above described.

III. *Dr Macgillivray* exhibited a PATIENT to illustrate the result of one of the operations the pathological specimens from which he had exhibited at the last meeting of the Society. There had been removed from the patient, an old Irishman, aged seventy-six, an epitheliomatous mass occupying the left cheek, and necessitating the removal of the anterior wall of the antrum. A gap the size of the palm of the hand resulted; this was filled up by means of a large flap taken from the submaxillary region, and the parts had now completely healed, the flap occupying its new position with hardly any resulting deformity. The only fact of interest regarding the patient's recovery was, that the parotid duct having been divided during the operation, and a portion of it removed, a salivary fistula had formed. This was obviated by passing the two ends of a portion of fishing-gut from the fistulous opening into the cavity of the mouth at two different points, by means of a needle in a fixed handle, then drawing the loop projecting externally into the fistula, and tying the two ends in the mouth tightly round the enclosed buccal tissue. A drain into the mouth was thus established until the fistula healed. The fishing-gut being then removed, the saliva continued to flow freely into the mouth.

IV. *Dr Wyllie* showed a NEW GALVANIC BATTERY and RHEOPHORE, which will be described in a separate paper in the February number of this Journal.

V. *Dr Byrom Bramwell* showed a series of MICROSCOPICAL SECTIONS and DRAWINGS, illustrative of some points in the morbid anatomy of locomotor ataxy, an account of which will be found at page 615 of the present number of this Journal.

VI. *Dr A. G. Miller* showed a drawing of an UNRUPTURED HYMEN which he had discovered in a prostitute admitted under his care in the Lock Hospital for gonorrhœa and syphilis. The hymen was lax and freely movable, which probably accounted for its escaping from injury. Dr Miller remarked that he brought this case before the notice of the Society on account of its possible importance from a medico-legal point of view. The drawing was made by Mr J. Grant, a medical student.

VII. *Dr P. Heron Watson*, from a case of successful amputation at the hip-joint, showed the HEAD AND NECK OF THE FEMUR in the condition of necrosis. The patient from whom this specimen was removed was a young girl of fifteen years. About a year ago she was seized by pains of a rheumatic character in connexion with the hip-joint, and supposed to be due to rheumatic fever. After these had continued with great severity for some time an abscess formed. The patient was then admitted to the Infirmary, when the abscess was opened, he understood, with every antiseptic precaution. After a period of some months' residence in the Infirmary she was discharged, a copious discharge still continuing. Recently she had been admitted to Chalmers Hospital under his care. On careful examination of the parts, the necrosis of the head and neck of the bone was detected, with caries of the trochanteric region of the bone. There was also a suppurating condition of the bones of the tarsus of the same limb. The removal of the whole limb was recommended as the most certain means of relieving the patient of a state of disease which would otherwise speedily prove fatal, especially as she suffered from gastro-hepatic disturbance and constant diarrhœa, with extensive bed-sores. The limb was removed four weeks since by amputation at the hip-joint, performed virtually in accordance with the method suggested by Mr Furneaux Jordan of Birmingham. The difference consisted in the condition of parts admitting of the turning out the trochanteric extremity of the femur without a preliminary section of the bone. The operation was performed by making—*first*, a straight incision from 3 inches above the trochanter major directly downwards for 6 inches; *second*, carrying a transverse incision through the skin down to the fascia round the limb, on the level of the lower extremity of the linear incision; *third*, turning out the trochanteric extremity of the femur, and stripping it from its soft coverings; *fourth*, cutting from the bone through these soft parts along the line of incision already carried through the skin and cellular tissue; *fifth*, the vessels were secured with Pean's forceps and tied; *sixth*, the acetabular cavity was cleared of the dead head and neck of the bone; *seventh*, the suppurating sinuses and surface were sponged with chloride of zinc solution, and the flaps adjusted by sutures of fishing-gut, a free drain being left at the most dependent part. The stump was dressed with boracic dressings, and latterly with fine oakum. The stump was now healed. A pelvic abscess, which had apparently formed by extension along the course of the iliacus muscle at an early period of the case, and which resumed fresh activity after the amputation, was freely opened and drained by tubing. The diarrhœa ceased after a few days; the appetite became established, and the patient was now in a fair way to be restored to sound health. This was a case in which the major amputation in the body was practised where the putrescence of the parts rendered any antiseptic precautions inoperative, and where the results had proved perfectly successful—a fact not unimportant to note in these days, when younger practitioners were apt to be misled by the pretentious statements of enthusiasts who appeared to have forgotten the triumphs of surgery in days before the advent of their own crotchet.

VIII. *Dr Cadell* then read his paper on the CONTAGIOUS DISEASES ACTS, which appears at page 620 of this Journal.

Dr W. Taylor thought he might save time by breaking the silence and starting discussion on at least two points in Dr Cadell's paper, which he thought fairly admitted of a difference of opinion. The first was the question as to whether venereal disease was a subject of sufficient gravity to engage the attention of Parliament. The second was the question as to whether syphilis was physiologically hereditary by being transmissible to the impregnated female through the male germ, although non-transmissible by sexual contact or contagion when not followed by pregnancy. With regard to the first question, if Dr Cadell's view as to the triviality of the disease be correct, then all the past teaching on the subject must be erroneous, for by it we had been led to believe that syphilis was one of the most formidable of diseases, often in its immediate effects, often in its remoter consequences, not the least of which was a specific diathetic change in the constitution, with all its attendant susceptibilities. Dr Taylor held that this view was correct, and that syphilis was at least as worthy of legislative cognizance as such other virulent diseases as, say, smallpox. The second question was partly physiological and partly pathological. He thought it was reasonable to suppose that certain females would not be susceptible to contagion from mere approximation of the mucous surfaces. Many circumstances might tend to modify that susceptibility. But it was also reasonable to suppose that the closer physiological contact involved in the result of a fruitful coitus could hardly fail in being detrimental to the woman to the full extent to which the germ was diseased. All experience favoured this view, and he ventured to say that most of them had had in their individual practice cases in which it had been illustrated. They had observed, through preliminary periods of sterility, no evidence whatever of syphilis, whereas very soon after conception had taken place these symptoms manifested themselves in the pregnant woman. How could it possibly be otherwise? How could the blood of a syphilitic fœtus circulate through the maternal veins without communicating the disease? With regard to the one-sidedness of the present Acts of Parliament all must be agreed. Any legislative measure which only recognised the delinquency of one sex where both are involved must necessarily be one-sided, and to that extent, at least, inefficient.

Professor Gairdner said,—It is a great comfort to hear a subject like this, on which we are accustomed to hear much that is rather of the nature of declamation than of argument, discussed in a calm, scientific manner. I had hoped that some one might have represented the other side of the question, as, for myself, I agree so much with Dr Cadell. One point as to hospitals: I agree that the increase of lock hospitals would be a great boon, but am inclined to question whether special lock hospitals are the best mode of solving the difficulty, considering the stigma which attends a lock hospital; it would be better to set apart special wards in general hospitals. With regard to the social expediency of the Acts referred to, their fitness or otherwise for accomplishing their purpose, and their actual results, I can speak only as a physician; but, with every disposition to be impartial, it is exceedingly difficult to detach the medical from the moral question. Now, have the Acts succeeded in doing what they profess to do? Statistics are most misleading, and it is very difficult to determine whether the Acts have succeeded. I agree with Dr Cadell's estimate, and that the success attained is not worth fighting for. Have the Acts done what (according to their principles) they ought to have done? The principle of the Acts is so to clear the streets of a protected district that a soldier or a sailor cannot possibly get either syphilis or gonorrhœa. Can any one say that they have actually come within miles of accomplishing this ideal? and would it not be more correct to say that, looking to what they aim at, and the immense machinery they set in operation, they have utterly broken down? If so, does not this failure suggest that the Acts are going on a wrong line entirely? If failures to save the soldiers and sailors from syphilis and gonorrhœa to an extent that might be reasonably expected,—if even gonorrhœa is propagated as largely as before notwithstanding the Acts,—then the question comes in, Are they on the right line morally? If they were medically successful, it might perhaps be right to keep them in being; but if not, is the precedent a right one, and will not the believers in the Acts go on to remedy their deficiencies and buttress their weak points by demanding an extension of their area, and a more rigid and general application of their machinery? And so we get by only too easy stages from an apparently guarded and strictly localized protection for our soldiers and sailors, to initiate a general system, as in most Continental cities, of State brothels and licensed prostitution. Does this, again, succeed? We get into a maze of statistics which are difficult to understand. I appeal to you who know Continental cities. Can you really believe that there is any probability, from what you see and hear, that syphilis is restrained, or even lessened, or is less in such cities as Antwerp, Vienna, and Berlin, than in London, Edinburgh, or Glasgow? I don't believe that in any of the protected cities there is less syphilis, but rather that there is more. And to explain this,—you permit licensed houses, and point out thereby to a young man a field of apparent security; dignifying the position, give it a status as a sort of education through which any one or every one is expected to pass. You hold up to the young this idea of a false security, and give them the machinery; but do you confine the vice to the State institution? No; the young men, beginning in a brothel, go on in an ever-spreading circle of demoralization, in which outer circle of vicious haunts, even supposing the public brothels to be kept physically pure (as we now know, however, they simply cannot be), an abundant crop of syphilis is propagated. These things are plain enough; and though a difficult subject, I confess I have always been struck by the dreadful callousness of public opinion on the Continent on the subject, and therefore I do not wish to see the system in this country. In Glasgow, the superintendent of police, who, from the official point of view, might perhaps have been expected to see and understand all the good points of these Acts, has repeatedly informed me that his experience and his practical views of duty have led him quite in an opposite direction, viz., to the suppression, as far as the law will allow, of the brothel altogether as an institution, and a stern police supervision over street solicitation and all the overt forms of public demoralization. This may or may not be right in principle, or it may by some be expected to encourage clandestine practices which will ultimately defeat the end in view; but at all events it may be said that hitherto, with brothels closed and broken up on all hands, and external decency maintained in the principal streets, the statistics of the lock hospital and of the reformatory institutions show that while syphilis has apparently diminished in Glasgow, a large number of prostitutes have been driven, from sheer lack of occupation, into the reformatories.

Mr Chiene, after congratulating Dr Cadell on the scientific spirit with which he had discussed a difficult subject, pointed out that as medical men, in this Society, they had to deal with a disease, and to consider how they could best mitigate it; with the theological aspects of the question they had nothing here to do. It seemed to him that Dr Cadell expected too much from these Acts. They were certainly not perfect; this he believed to be in great measure due to their restriction to localities. At the same time, we could, even at the best, only look for an approach to perfection in this as in all things human. He believed that the good done to our soldiers and sailors was greater than Dr Cadell would allow. In his opinion, both gonorrhœa and syphilis were sufficiently serious diseases to require legislative interference. The effect of these Acts on the civil population in the area around the protected district was, in his opinion, still *sub judice*. If clandestine prostitution followed in their wake to the extent described by Dr Cadell, then, from what he had seen of the evils of clandestine prostitution in Edinburgh since the passing of the recent Municipal Act, he was prepared to reconsider the whole question. Two courses seem open—either to do away with the Acts, or to extend them to the whole country. To do the first would be foolish; they had not yet been fairly tried (if a trial in the restricted way can ever be fair). This country was not prepared to do the second—viz., to extend them over the whole population. In the meantime, while feeling that Dr Cadell had brought forward a number of objections which it might be difficult to answer, and for which he had suggested no remedy, Mr Chiene was prepared to give these Acts in their present form a further trial. The certificate might be so worded that it did not say that "the woman was clean," but that, "as far as could be judged, the woman was clean." It was, as Dr Cadell stated, very difficult to speak dogmatically on this point.

Dr Cunynghame mentioned how in India our troops are protected. Accompanying each regiment is a native bazaar, and among the other inhabitants of this are prostitutes. Whenever a man presents himself at hospital with acute venereal disease in any form, the woman from whom he contracted his disorder is at once identified and put under treatment by the native assistant in the hospital. This plan answers well in small stations where there is only one bazaar; but in large stations, with several regiments quartered in them, it fails to some extent, as the woman may manage to go from the bazaar of one to that of another. By this plan, however, the entrances into hospital on account of venereal disease are decidedly kept under. In former days it was throughout the army usual to have the men inspected regularly by the junior medical officer, to see that no one was suffering from the disease and hiding it. He thought, unless the Contagious Diseases Act can be made general throughout the whole country, it must fail to do what is intended by its supporters.

Dr Macgillivray remarked that a good deal had been said in the course of this evening's discussion regarding the imperfect results obtained, both at home and abroad, from the present legislative measures, from which it was argued that all legislative interference in such matters was a mistake. The want of perfect success on the Continent was, he thought, easy of explanation. In Paris, for example, there were two hospitals for venereal disease in women, both under State control and supported by Government—the Hôpital St Lazare, for prostitutes who were under police supervision, and the Hôpital Lourcine, containing about three hundred beds, for the general female population. Although he did not deny that respectable women who had in any way contracted disease might occasionally be treated in the Lourcine, still one might say that for the most part it was the hospital for illicit prostitutes. These women were treated either as out-patients, continuing to live in the town and coming to the hospital for treatment, or were of their own free will admitted into the wards, where they remained under treatment until discharged, when they might return to their former habits of life without ever coming under the surveillance of the police. The same state of matters prevailed, so far as he had been able to observe, both in Vienna and Berlin; and this being so, it was easy to understand how the present Continental systems were far from proving completely successful in stamping out venereal disease. But while admitting that the present legislative measures, both in this country and on the Continent, were very imperfect, and therefore had failed to obtain all the good results some had anticipated, he did not think it fair to argue from this, as had been done this evening, that all such legislation was necessarily a mistake. It was undeniable that the Acts, even as at present carried out, must to a certain extent tend to diminish venereal disease, and the reasonable logical deduction from this seemed to be, not that the laws should be annulled, but that they should be improved and amended. Were the same line of argument adopted in other matters as had been made use of this evening by those opposed to the Contagious Diseases Acts, then, by parity of reasoning, compulsory vaccination should be done away with, because outbreaks of smallpox still continued to occur.

Dr Miller remarked that before coming to the meeting he had believed, what he was frequently told by the advocates and promoters of these Acts, that the majority of medical men were in their favour. Since, however, hearing Dr Cadell's paper and the speeches which had followed (more especially that of Professor Gairdner), he was prepared to believe the contrary—at any rate as regarded the medical men then present. He had intended criticising the Acts from very much the same point as Dr Gairdner, but after that gentleman's able and effective speech he had nothing to add. With regard to Dr Cadell's paper he would like to say a few words. Dr Cadell had said that he did not consider venereal diseases sufficiently serious to require such strong and rigorous measures as the Contagious Diseases Acts. He (Dr Miller) was not prepared to say exactly the same. But this he would say,—that syphilis was not now as serious a disease as it was twenty or fifty years ago; and he believed that this was the opinion of all in the present day who had to do with the disease, and who were able to remember the manifestations of twenty or fifty years ago. He held in his hand a voluminous document, the Report of the Select Committee of the House of Commons appointed to consider the Contagious Diseases Acts. He would not trouble the Society by referring minutely to these reports, but merely mention one or two points. The first was in support of what he had just been saying. This was a diagram prepared from the number of cases of primary venereal sores occurring in the army from 1860 to 1877. The diagram shows two lines, the one indicating the actual number of cases, and showing a fall from 146 per 1000 to 35 per 1000; the other line indicating a calculation made by Dr Nevins of the probable fall during the thirteen years after the passing of the Contagious Diseases Acts, on the average of the six years before the Acts were in force. The two lines were much the same—the one terminating at 35, the other 32, per 1000. Dr Miller pointed out, also, that there was a steady fall shown in the returns for secondary syphilis during the years 1860 to 1878—there being a steady fall from 2·68 per 1000 to 1·88. Another point to which Dr Miller referred in these reports was, that the most marked fall in numbers following the operation of the Contagious Diseases Acts was in primary sores. Dr Miller considered that this was most likely due to an effect produced on chancroids or soft sores—which, in his opinion, were more likely to be influenced by the Acts than any other venereal affection. Dr Miller said that he considered that the slumping together of all venereal sores was a great mistake, and made the army returns almost worthless. Dr Cadell had touched upon the important subject of congenital or hereditary syphilis. He (Dr Miller) could not enter upon that subject, although he would like to do so, as he considered it the most important point at present in connexion with the pathology of syphilis. Dr Miller hoped that Dr Cadell would favour the Society with a paper on that subject at an early date.

Dr James Ritchie thought that in the discussion of this subject one of the first questions which arose was, whether the ruling body ought to endeavour to protect the members of the community from infectious disease. The general answer now was in the affirmative; and this being so, he did not see why those affections to which the Contagious Diseases Acts owed their existence ought to be disregarded, any more than scarlatina, diphtheria, etc. While he agreed with much of what Dr Cadell said, he could not agree with him in his first conclusion, and he thought that the cases seen in the practice of a general hospital, and also a knowledge of the immense loss to the country through the effect on our soldiers and sailors of the diseases under consideration, must lead one to the conclusion that some protective measure is very urgently needed. It had been stated that medical men have nothing to do with the moral aspects of the question; but he agreed with Dr Gairdner that we do not get very deeply into an examination of the subject before we are brought face to face with its moral bearings, and we must not, therefore, disregard these in considering any remedial measure. Three means of protection had been alluded to—1*st*, the Contagious Diseases Acts, which, as had been shown, although they benefited the naval and military, had not influenced in any great degree the civil population. Dr Gairdner had ably pointed out the grave objections to them, and he hoped they would never pass into law in relation to the whole country. 2*d*, It had been urged as an objection to the closing of disreputable houses, and as an argument in favour of their continuance as a protective means, that not only are the women thereafter scattered over the town in hitherto respectable neighbourhoods, but that they are subjected to no restraint when diseased; whereas that formerly they were collected into certain quarters, and the owners of the houses, in order to preserve their reputation, were careful to have placed under treatment any inmate known to be the subject of infectious disorder. Dr Cadell had shown the difficulty, in some cases, of recognising disease, and that the syphilitic cases are never allowed to remain sufficiently long under treatment. Furthermore, the existence of such houses is morally indefensible. Dr Ritchie would like to see a longer and very stringent trial of the third method mentioned—that which had been in operation for some time in Glasgow, and for a shorter period in Edinburgh, viz., the closing up of all such houses, and the apprehension of all women found soliciting on the streets. The first effect of scattering the women might be, for a time, an increase in the number of cases of disease; but as the former inmates of the houses passed out of existence there would be less chance of their places being supplied by others, because it was well known that at present agents are employed by the owners of houses to keep up the supply of women, and many innocent girls are thus lured and betrayed into a life of shame. If the houses were closed, their sources of supply might be expected to diminish, and as the temptations to the other sex, and the facilities for indulgence, would be fewer, it was within the range of reasonable probability that ultimately both vice and disease would decline. This method had seemed to act well in Glasgow, and he hoped, with a more lengthened and rigorous trial, it might prove still more beneficial.

Dr Gillespie said that he had not intended to make any remarks on the subject of the paper, as he had come to hear the opinions of the younger members thereon; but as Dr Miller had given a sort of instruction to the secretaries to note the unfavourable views of the Society as regarded the Contagious Diseases Acts, he felt it incumbent on him to say that he approved of the Acts as regarded our garrison and seaport towns, believing that they had been of much benefit, while he did not think, so far as his experience went, that the civil population had suffered thereby.

Dr Taylor said that as his previous remarks had only been made for the purpose of breaking the ice, he hoped he would now be allowed to state the results of his increased knowledge of the subject gained by the discussion. The question seems to have resolved itself into considerations which may be briefly formulated under three heads—1st, morality; 2d, expediency; 3d, efficiency. Dr Gairdner in his remarks seemed chiefly to lay stress on the want of efficiency in the Acts of Parliament as tested by statistical results and by vague comparisons of English and Continental cities, so far as these in their morality impressed a casual visitor. Now, our statistical information is not sufficiently full, nor our experience of the working of the Acts sufficiently complete and long-continued in this country, to warrant us in deciding for or against them, and the second method of inquiry must be regarded as wholly unscientific. Then, as regards the morality of the question, Dr Gairdner seemed always to fight shy of it, whilst Mr Chiene openly avowed that he had nothing whatever to do with the morality of the case.

Mr Chiene.—I said, as a surgeon I had nothing to do with it.

Dr Taylor thanked Mr Chiene for the correction. That was entirely what he understood him to say; but still he held that it was with the morality of the question that they as physicians and surgeons had most to do. The morality was the very foundation of the whole question. Let us suppose that Mr Chiene's boys and mine are at school together, in the same class, and that whilst one of mine takes scarlatina I continue to send the other one to school, and that he infects Mr Chiene's son with the disease. Mr Chiene would surely say that I had been guilty of an act of gross immorality, and he must agree that the State or some other power ought to place such restrictions on me as to prevent my continuing the same line of conduct. But suppose that my son, aged eighteen, takes a quiet walk in the evening, innocent, and perhaps salutary, in its purpose, and that he meets a woman on the streets—who, I hold, has no right to be there—and that he is enticed by her and consents. Suppose that in consenting he contracts a disease which will last all his lifetime, and perhaps to two or three following generations. Surely the person who misled him committed a double act of immorality in first leading him into sin and then infecting him with disease. If I would have been guilty in propagating scarlatina, how much more would she be guilty in at the same time propagating syphilis and producing sin! And surely the State, or some other power, ought to step in and place such restrictions on individual conduct as would provide against the recurrence of anything which naturally involves such fearful consequences, by first of all removing the temptation, and next preventing contamination. The first can be accomplished by keeping prostitutes off the streets, the second by seeing that they are kept free from disease. The removal of temptation and the cure of disease are alike good and laudable for their own sakes—so good that no fastidious sentiment which finds expression in such phrases as "fear of legalizing of vice" can for a moment be held in comparison with them. But we are told that this plan has been tried and has failed. If so, then it has only failed through inefficiency either in conception or execution; and if the principle be right in itself, we should not give it up, but rather endeavour to secure its ultimate triumph by striving as much as possible to render the means efficient. With this view he would suggest that every case of syphilis in the male which comes under our care should be registered privately, not so much for statistical purposes as for hunting up the source. If this were done effectually, we would soon have every infected female traced out and placed in quarantine. Hereafter he would suggest that, in order to obviate the difficulties in diagnosis experienced by Drs Cadell and Miller, and for many other good reasons, he would hand over all the females so quarantined to the care of lady doctors (*commotion and applause*). Every one knows that ladies are possessed of keener sensibilities and acuter powers of discrimination than men; and he would guarantee that if this department were entirely handed over to them, as it should be, no case of venereal disease in the female would escape detection for want of delicate diagnostic skill. Every one must therefore admit the importance of this question, so far as regards its *morality* and *expediency*. All that remains for us is to secure that it be dealt with *efficiently*.

Dr Cadell, in reply, thanked the Society for the favourable way it had received his paper. He thought Dr Taylor's suggestion, to register cases of syphilis in order to hunt up the source, impracticable, and likely to cause great injustice as well as ill-will, for in many cases men were ignorant of the exact source of infection.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XL.—MEETING I.

Wednesday, 10th November.—Dr ANGUS MACDONALD, *President, in the Chair.*

I. *Dr Halliday Croom* showed (1.) a MACERATED HYDROCEPHALIC SKULL from a fœtus on which he had performed cephalotripsy. By means of a trocar and canula he first punctured, and then drew off about 16 oz. of fluid. Forceps were applied, but he failed to extract owing to the narrowness of the brim, and he accordingly used the ordinary perforator, applied the cephalotribe, and effected delivery with ease. As the skull beautifully showed, the cephalotribe had not crushed the base, but canted it to the one side and bent it up. (2.) A specimen of SPINA BIFIDA occurring in the sacral and lumbar regions. The child had also developed hydrocephalus. (3.) A SMALL FIBROUS POLYPUS, about the size of a goose egg, which he had recently removed from the uterus of a young woman who had suffered from intense dysmenorrhœa. On examination bimanually and with the sound, he found the uterus enlarged to about the size of a three months' pregnancy, and, after dilatation of the cervix with a sponge-tent, removed the tumour shown. He had no doubt it had been the cause of all her suffering, as she had since menstruated without pain.

II. *Dr Taylor* wished to give his experience of sutures of different material. In one case of excision of the mamma he had found silver wire causing suppuration. In another case he had used two deep catgut sutures, two deep silver ones, and two deep silk ones. He then found that the silk (waxed but uncarbolized) did well, but both silver wire and catgut badly.

The President mentioned a case where he had intentionally left three silkworm gut stitches in a perineum twelve days beyond the usual period, and found them quite good and fresh then. He mentioned this in reference to Dr Keiller's question regarding this material in the debate on his (Dr M.'s) last report.

III. *Dr C. E. Underhill* then read for *Dr T. Elgar Underhill* the following communication on HARE-LIP AND CLEFT PALATE IN A CASE OF TWINS:—The case is unique as far as my own experience goes, and I therefore venture to place it on record, not so much as a contribution towards settling the vexed question of ovulation in twin pregnancies, but rather as an instance of one of the many freaks which Nature so often plays upon the fœtus in utero. S. J., æt. 25, married, was delivered on August 29th, 1880, of twins (females). Had one child three years ago. Ceased menstruating on Dec. 26th. Pregnancy natural throughout. Labour easy and rapid. The first born was a vertex presentation, and was not so well developed as the second child, which presented by the breech. The umbilical cords were separately inserted into one placental mass. On examining the children I noticed that in both there was a fissure in the upper lip, on the left side. In the larger child the fissure extended into the nostril, widening the alæ, and causing a great disfigurement. Associated with this was a cleft through both the hard and soft palates. In the smaller child the fissure was less, and did not involve the nostril; the hard palate was entire, but the soft palate was widely cleft. The mother told me that the first and only case of hare-lip she had seen was in a friend's child, which had died in November last. She saw the child in its coffin, and the sight appeared to produce an effect upon her, as she continued to think about it for a long time after. In this case the fissure in the lip was also on the left side. Although a firm believer in the influence of maternal impressions during pregnancy, I should hesitate before placing the above in the same category, but rather content myself with looking upon it merely as a curious coincidence.

The President and Dr Simpson remarked on the interest of the communication.

Dr H. M. Church inquired as to the best time for operations on cleft palate.

Dr Taylor thought it a matter not so much of age as one depending on the fretfulness of the child. An age of two years he believed to be a good period.

Part Fourth.

PERISCOPE.

MONTHLY RETROSPECT OF OBSTETRICS AND GYNÆCOLOGY.

By Angus Macdonald, M.D.

On the Treatment of Puerperal Fever, by J. Matthews Duncan, M.D. (*Lancet* for October 30, and November 6).—Under the name puerperal fever Dr Duncan includes septicæmica and pyæmia occurring after delivery, and all the ordinary diseases of the lying-in chamber which are accompanied by fever, and which may be fatal. In discussing the subject of treatment, he first takes up simple traumatic or inflammatory fever, and advocates for it a modified antiphlogistic regimen and treatment, with pretty copious local depletion and the use of poultices. In the later stages he advises the use of large rising blisters. Opium at night, and by day too, if indicated, are also recommended, and the author approves of the use of mercury—blue pill, 6 grains, daily in severe cases with local peritonitis. A second class of cases he differentiates as sapræmia, or poisoning by the chemical products of putrefaction, but points out that this is frequently combined both with the inflammatory and the septic and pyæmic cases. The treatment of pure sapræmia consists in stopping the supply of the poison. Putridity of the discharges may be evident or may be concealed, and the author insists on its being searched for by the introduction of the carefully carbolized finger, even into the uterus, if necessary. In illustration of the treatment he gives a typical case. The patient was first seen ten days after delivery. For two days previously she had had rigors. On admission to hospital she was delirious, pale, and troubled with frequent vomiting and diarrhœa; breath sweet; respirations, 44; pulse, 146; temperature, 104°·2; and with a copious flow of stinking lochia. Chloroform having been administered, as much as possible of the retained and adherent placenta and membranes was removed manually and with volsella. The whole genital tract was then washed out with 1-20 carbolic lotion, and this was repeated every four hours. Ergot was administered. This treatment was continued till in a few days the patient was quite well. Similar lines the author recommends to be followed in sapræmic cases, special stress being laid on the use of ergot. The treatment, or rather management, of septicæmia and pyæmia are then considered together, the surgical interference sometimes necessary in cases of the latter being purposely omitted. Good nursing, careful feeding, and prudent stimulation are given as the main points to be attended to. In regard to stimulants, the author prefers brandy and champagne, provided they be really good, but advises that as little as possible be given. Occasionally, but rarely, in a crisis of weakness, brandy is to be administered largely. In addition, iron and quinine or salicine are frequently used, the latter along with tepid sponging and ventilation, to reduce the temperature. Symptoms, such as thirst, sickness, or flatulent distention, are to be combated by such means as the use of toast-and-water, ice, bismuth, and hydrocyanic acid, and the puncturing the abdomen by a small trocar and canula. The use of opium is advised, but attempts to check diarrhœa are discountenanced unless indicated by a failure in the strength of the patient. If fœtor of the discharges be present, it is to be treated as in the sapræmic cases. In regard to prophylaxis, the author says we find some degree of protection in antiseptic midwifery, and he looks forward to the time when the contagium vivum of these more severe cases of puerperal fever may have its potency diminished or nearly annihilated by methods analogous to those used to reduce the potency of the variolous contagion.

ON THE MEANS FOR DILATING THE UTERUS, by Dr Leopold Landau (Volkman's *Sammlung Klinischer Vorträge*, No. 187).—In discussing this question the author mentions, first, the use of various metrotomes constructed after the model of the lithotome caché, but of these he disapproves on account of the dangers of their cutting too much, of bleeding, and of subsequent stenosis. For similar reasons he objects to the use of such instruments as Sims' or Emmet's knives or scissors. To dilate the os internum by means of such blunt instruments as those of Sims, Ellinger, Tiemann, etc., requires, he maintains, that the patient be narcotized and considerable force used, while there are similar objections to their use as to that of cutting instruments. Sponge-tents favour infection, so that septicæmia following their use is not rare. It is impossible, also, to render them thoroughly antiseptic without unfitting them for their purpose. The use of an indiarubber covering to the tent, with a stream of water thrown into it, is cumbersome, and also does away with the advantage to be got from the removal of fluids from the surrounding tissues by the sponge. Tangle-tents are not so liable to lead to infection as are the sponge-tents, though occasionally, from decomposition of their gelatinous structure, they may cause it. They are, the author says, very uncertain and unequal in their action, and have not a very great dilating power, being sometimes retained constricted by the internal os, while above and below they may be dilated. Dr Landau then goes on to recommend the use of tents made from the South American swamp plant *Nyssa aquatica* by Tiemann of New York, and called tupelo-tents. These can be made of any size, and have a much greater dilating power than tangle-tents, while they require less than half the time. They exercise, too, the same dynamic effect on the uterus as do sponge-tents. They swell to a much greater size than tangle-tents, and are not attended by the risks of infection. After recommending strongly their use, the author proceeds to discuss at length the question of when dilatation of the cervix is indicated, and strongly disapproves of the forcible method of Fritsch, as also the incision method recommended by Schrœder.

ON THE DETERMINATION OF THE INDICATIONS FOR GASTROTOMY IN CASES OF EXTRA-UTERINE FŒTATION, by C. Litzmann (*Archiv für Gynäkalogie*, Bd. xvi. page 323).—Dr Litzmann grounds his observations on two cases of the kind on which he operated on successive days, and on an analysis of forty-three cases extracted from various sources. The cases were :—I. Mrs P., a healthy, well-built woman, aged 25, pregnant for the second time. After her first confinement she had a pelvic inflammatory attack. She came under observation in the ninth month, and had had during her whole pregnancy repeated attacks of abdominal pain, and twice in the early months hæmorrhage from the vagina. The urine contained albumen. Passing from the right side of the abdomen above, to the left side of the pelvis below, was a large, oval, completely-fixed tumour, over which the abdominal wall was partially movable, and in which, at its upper part, could be felt a child's head. To the left, and about the height of the umbilicus, could be felt the enlarged uterus, which was slightly movable on the mass. The heart-sounds were audible on the right side and high up. Per vaginam, the lower part of the swelling could be felt projecting into the roof; to the right side and to the left, and higher up, lay the os uteri. The uterus was movable, the swelling was not. A right tubo-uterine pregnancy was diagnosed. Gastrotomy, with antiseptic precautions, was performed, and the placenta was not interfered with. There was only slight bleeding. The child weighed five and a half pounds, was greatly deformed from pressure, and died almost immediately. There was hardly any liquor amnii. A drainage-tube was passed into the cavity, through which it was washed out once or twice daily with carbolic water. On the thirteenth day this washing out caused profuse hæmorrhage, which was stopped by compression. Two similar bleedings occurred on the two subsequent days. On the seventeenth day the placenta was removed without much hæmorrhage taking place, and on the eighteenth the patient died. The pregnancy was found to be tubal, not interstitial. Case II., aged 35, pregnant for the seventh time; presented the ordinary history of extra-uterine pregnancy. On examination, the apparently empty uterus was felt pressed backwards by a large, round, fluctuating tumour, in which could be felt the small parts of a child, and over which could be heard the fœtal heart. At the end of the thirty-second week the fœtal movements ceased to be felt, and at the same time the heart-sounds became inaudible. Five days afterwards the breasts swelled, and a mass, probably decidual, was expelled from the vagina. A fortnight later small quantities of very fœtid matter came away from the vagina in gushes. Menstruation came on seventeen days after the death of the child. Nine weeks later gastrotomy was performed, and the fœtus removed, along with the placenta and the greater part of the membranes. Though the placenta was cut into by the incision, there was no serious bleeding. The operation was conducted antiseptically, and recovery was uninterrupted. After contrasting these two cases, the author reproduces from various sources, German, American, and English, accounts of forty-three cases of extra-uterine pregnancy where gastrotomy was performed, and divides them into cases operated on during the life of the child, and cases operated on after its death. He, however, excludes from the reckoning all those cases where a single abdominal incision was made to evacuate an abscess which had formed in the sac. In ten cases of the former class there were nine deaths and one recovery, while in thirty-three of the latter the deaths were fourteen and the recoveries nineteen. After a full analysis of these cases he comes to the conclusion that the dangers of hæmorrhage, either during the operation or on the subsequent separation of the placenta, are, in general, too great to warrant gastrotomy during the life of the child, which, moreover, in consequence of compression within its sac, is usually so much deformed and so imperfectly developed as to be unable to live. Accordingly, except in those cases in which the size of the sac and of the living fœtus contained in it are such as render it nearly certain that the child is large, well-formed, and likely to be viable, Litzmann maintains that the proper course is to wait for a sufficient length of time after its death to allow of complete thrombosis and obliteration of the placental circulation before interfering. He does not attempt to define the period necessary to wait until the circulation is closed, but thinks it ought to be a good few weeks. In his own case the operation was performed eleven weeks after death of child.

COMMUNICATION TO OUR KNOWLEDGE OF CYSTIC TUMOURS OF THE PELVIS (*Myoma lymphangiectodes ligamenti rotundi uteri*), by Dr G. Leopold, Leipzig (*Archiv für Gynäkologie*, Bd. xvi. page 402).—A patient, 43 years old, had for fourteen years noticed a hard knot in the right inguinal region. During the year previous to coming under observation it had greatly increased in size, had become painful, and the patient had greatly emaciated. With each menstrual period the pain in the swelling was greatly increased. On examination the lower part of the abdomen, especially on the right side, was found to be completely filled by a rounded tumour of the size of the uterus at term. Parallel to the linea alba there could be felt a groove dividing it in its whole length into two parts, the left of which was the smaller, being about the size of a child's head, and in it could be felt distinct fluctuation. In the right portion, immediately under the abdominal wall, there could be made out a number of knob-like projections of varying size, apparently containing fluid. On internal examination the uterus was found slightly enlarged, retroverted, and partially movable. The rounded swelling was found to fill up the whole brim of the pelvis. The mass was slightly movable, and was attached on the right in front to the abdominal wall. The case was diagnosed as a right multilocular ovarian cyst. An incision was made in the middle line, and it was then found that the tumour was connected below and to the right of the longitudinal cleft, and to the extent of several centimètres, with the abdominal muscles, and at the upper end of the cleft there was a bridge of connexion with the

peritoneum of about the breadth of a hand. The bleeding was excessive. The operation was not pursued further, and the patient died in three days. On post-mortem removal of the tumour, along with the uterus and ovaries, the latter were found normal, but greatly compressed. The right Fallopian tube was normal, and in the end of the right round ligament the tumour was found to be situated, the ligament spreading out fanwise into the tumour. Bands of the rectus and transversus abdominis muscles were found attached to the tumour, that of the former ⅜ of an inch broad and 5¾ inches long, and that of the latter 7⅛ inches long. The knob-like projections on the left portion were found to have muscular walls, and were lined with endothelium varying in thickness from ⅛ to ⅜ of an inch, and to contain a thickish yellow-brown fluid. The author explains the formation of the tumour as follows: —It commenced where the round ligament loses itself in the abdominal wall, and grew between the rectus and transversus muscles, then either pushed before it or broke through the rectus sheath, and rapidly increased in the cavity of the abdomen. The solid part of the tumour was found microscopically to consist of unstriped muscular tissue, and from the arrangement of the cysts and the structure and arrangement of their lining membrane he takes them for dilated lymph-vessels, and therefore calls the tumour a myoma-lymphangiectodes of the round ligament. The author believes that in this tumour he finds strong corroboration of the congenital theory of the origin of tumours urged by Conheim.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By William Craig, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

Homotropine.—Dr Froumneller (*Memorabil.*, August 1880) has experimented with the bromate of homotropine on twenty-three persons as to its effect in dilating the pupils, and on thirty-five as to its poisonous qualities. In general, its power of producing dilatation he found as great as described by previous observers. In the study of its intoxicating effect he injected hypodermically a solution of one milligram gradually up to five milligrams a day. He then gave internally from five to twelve milligrams in three or four doses a day until toxic symptoms were noticed—dryness of fauces, giddiness, etc., but there was no dilatation of the pupils. His conclusion is that homotropine is not so poisonous as atropia, and can be safely used in night-sweats, epilepsy, and whooping-cough.—*The American Practitioner*, November 1880.

Chian Turpentine.—The efficacy of Chian turpentine in staying the progress of cancer has been for some months made a special subject of clinical study in the wards of the Middlesex Hospital specially set apart for the reception of cancerous patients. In an exhaustive report on the results obtained, Mr Henry Morris, F.R.C.S., surgeon to the Hospital, emphatically declares that no beneficial effects have followed the careful employment of the drug, and that after an anxious and prolonged trial of it he is compelled to decide against the claims made on its behalf by Professor Clay of Birmingham. At the same time, occasional instances of its alleged power to stay the ravages of the disease continue to be reported in the journals; but these, as we have before suggested, may possibly be explained, as Mr Morris explains them, to be cases that would have improved under the older palliative treatment. It is disappointing, indeed, to have to accept the truth presented to us; but there is no appeal, apparently, from the facts adduced by Mr Morris, and in consequence Chian turpentine must be regarded in future as one more added to the long list of futile remedies against a terrible disease.—*Medical Press and Circular*, December 8, 1880.

THE POMEGRANATE ALKALOIDS.—M. Dujardin-Beaumetz, in a paper read before the Academie de Médecine upon the physiological and therapeutic effects of the above, deduces the following actions:—1st, They have decided physiological properties; 2d, They paralyze the motor nerves while leaving the muscular contractility intact, they do not affect the sensibility, and appear primarily to affect the motor nerves at their muscular extremities similarly with curare; 3d, The sulphate of pelletierine and of isopelletierine, in the dose of grm. 30 in a solution containing grm. 50 of tannin, have very marked tænicide properties; 4th, This physiological action should entitle them to trial in the case of certain diseases, such as those in which curare is indicated, tetanus, rabies, mania, etc., also in ocular affections when it may be necessary to provoke congestion at the bone of the orbit, and finally in certain vertigos, particularly that of Ménière.—*Medical Press and Circular*, December 1, 1880.

RHUS AROMATICA.—A. G. Springsteen, M.D. (*Amer. Méd. Jour.*, Aug. 1880), recommends the *Rhus aromatica* as the remedy *par excellence*, an invaluable specific, and the only known remedy in catarrh of the bladder and enlarged prostate that will effect a cure. The Doctor says that it has reduced an enlarged prostate gland for a patient of his, and he is using the remedy on other patients with satisfactory results. Dose, a teaspoonful of the fluid extract three times a day.—*The Detroit Lancet*, November 1880.

ERGOT OF RYE IN ACUTE RHEUMATISM.—At the Clinical Society of Paris Dr Chevallereau brought forward three cases in which the subcutaneous injection of ergotine had caused a rapid diminution of the pain and other symptoms of acute articular rheumatism. In the first case the ergotine was given for the relief of prolapse of the rectum, without any idea of its having any effect on the rheumatic affection from which the patient was also suffering; but, to the surprise of the Doctor, the next day articular pains had much diminished, and the patient was able to move her joints. The author brings forward no theory to account for the facts, but hopes that other physicians will try the remedy. — *Medical Press and Circular*, December 1, 1880.

THERAPEUTIC EFFECTS OF CHLORATE OF POTASSIUM.—In a paper read before the Ulster Medical Society, Dr Harkin states that he orders this drug as a saturated solution, *e.g.*, one ounce of the salt to twenty of water, of which, for adults, one ounce three times daily, either before or after food, is the ordinary dose. Most useful by itself, its efficacy in arresting disease in chlorotic or hæmorrhagic diathesis may be greatly enhanced by the addition of iron in one of its many forms, the most convenient being tr. fer. perchlor. With the permanganate of potassium it forms a most excellent gargle and mixture in sore throats with diphtheritic exudation, and for the healing of ulcers. It also forms a good base for many pectoral mixtures. Chlorate of potash in the form of a lotion is an excellent and rapidly-acting healing agent in injuries due to burns and scalds, even in those severe cases where the subcutaneous tissue is destroyed, and when ulceration is present after the separation of the eschars. In the treatment of the caries of the vertebræ of the neck by the injection of a solution of the salt, it has been employed in two cases with the greatest advantage, and in cases of strumous abscesses and sinuses treated by injection the cure is generally very rapid, the constitutional requirements being in every case attended to by the internal administration of the salt. The effect of chlorate of potassium upon ulcers, simple, irritable, indolent, and rodent, is very remarkable. The hard and elevated edges of old ulcers rapidly give way to flattened and healthy ones, whilst the excavated sore is altered by the oxygenating power of the lotion, and is replaced by healthy granulations. (*The Dublin Jour. of Med. Sci.*, May 1880.)—*The Practitioner*, December 1880.

THERAPEUTIC USE OF IODOFORM (*Jour. de Méd.*, p. 371, Aug. 1880).—According to Dr Lindemann, the balsam of Peru completely masks the odour of iodoform; two parts of the balsam completely neutralize one part of iodoform. The best vehicles are, lard, glycerine, or, better still, vaseline. Here is a formula which the author recommends:—Iodoform, 1 part; balsam of Peru, 3 parts; vaseilne, 8 parts. He also often prescribes the following:—Iodoform, 1 part; balsam of Peru, 3 parts; alcohol, glycerine, or collodium, 12 parts. First mix the iodoform and balsam thoroughly, then add the other ingredients. — *Chicago Medical Journal and Examiner*, November 1880.

THE THERAPEUTIC VALUE OF IODIDE OF ETHYL.—Dr Lawrence states that the iodide of ethyl appears to act as an antispasmodic in the paroxysms of spasmodic asthma and in other forms of nervous dyspnœa. In the dyspnœa incident to bronchitis and to chronic affections of the air-passages it promotes a free mucous secretion, its action being in such cases partly expectorant, and thus resembling that of the alkalies. But since in bronchitic dyspnœa there exists usually, if not always, a reflex contraction of the bronchi, the antispasmodic quality of the drug is also of value. In general, iodide of ethyl appears in some way or other to favour the oxygenation of the blood, and thus to stimulate in a reflex manner the respiratory muscles. In conclusion, Dr Lawrence believes that the drug has a very positive therapeutic value, and is a prompt, safe, and efficient remedy in many forms of dyspnœa. The drug may be administered as follows:—Having moistened a handkerchief with eight or ten drops, the patient may be directed to inhale the vapour therefrom. As soon as he shall have acquired confidence, let the inhalations be made directly from a small vial containing half a drachm of the drug, and applied to the nostrils. Let the inhalations be continued for ten minutes at a time, thrice daily or oftener. Should slight nervous symptoms, due to the primary exhilarating effects of the ether, supervene, the inhalations may be discontinued for some seconds and then resumed. By this method the system is kept constantly impregnated with iodine. A very brief time is required for its absorption. The iodine is taken up by the respiratory mucous membrane, and is conveyed by the bronchial and pulmonary veins directly to the left auricle, and thence into the arterial circulation. It has been detected in the urine in ten minutes after the inhalations. The writer has found it in urine voided at the following intervals:—Forty-five minutes, one, seven, eighteen, twenty-four, thirty hours. (*The New York Medical Record*, June 19, 1880.)—*The Practitioner*, December 1880.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. Allan Jamieson, M.D., F.R.C.P., Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

Of what does the Black Point of Comedones consist? is the question which Unna of Hamburg sets himself to answer. All the works on skin diseases which notice it at all say that it is due to dirt which has become adherent to the inspissated sebum which plugs the duct of the gland. Unna, however, observed, when treating cases by scraping with the sharp spoon, as recommended by Volkmann, Auspitz, and Ellinger, that numerous comedos made their appearance for the first time after the uncoloured horny layer had been scraped off. If, then, the dark colour of these was due to dirt from without, we must assume that a layer of cuticle grew over and closed this in after its deposition, which is untenable. Often, on parts so scraped, light yellow plugs were seen, which next day were darker, and in course of a few more had become the ordinary black, somewhat projecting comedones. Unna is of opinion that this yellow colour arising beneath the cuticle is but an earlier stage of the black, into which, indeed, it passes sooner or later, with or without contact with the air. Various modes of treatment favour for a time the appearance of these black points, particularly sulphur. Yet they appear equally in parts artificially protected from contact with dust, and on covered parts, as the back and chest, as well as on the face, and are not more common in colliers and dustmen than on well-to-do but chlorotic girls. Again, this black coloration is found not merely on the surface of the comedo, but deeper into its structure, though not so intense in shade. While, however, the other components of comedos, altered epithelium, fat, cholesterine, hairs, etc., have been made out, the nature of the colouring material has not been specified. The true cause of the formation of comedones is, according to Unna, due to the tendency of the cuticle to become abnormally horny. In this way the opening of the sebaceous follicle becomes closed over, the sebum continues to be secreted, and by the advance of this hardening process within the follicle the sebum becomes surrounded by a horny case. The presence of minute hairs or not is accidental. The structure of comedos was studied by making thin sections of them after embedding in paraffin. The colour of the apex was found to consist of diffuse pigmentation and of coloured granules. The diffuse pigmentation was due to darkening, from age and exposure to the atmosphere, of the cells of the horny envelope. The granules could be divided as to their colour into three groups—black, brown, and blue. These latter were somewhat translucent, and thus could not be particles of carbon, as Simon and Barensprung thought the black were. The colouring materials were found to be insoluble in distilled water, solution of chloride of sodium, alcohol, ether, or chloroform, either hot or cold. Alkalies cleared up the epithelium, but did not affect the colour; indeed, from rendering the media more transparent, more coloured particles came into view. On the contrary, all trace of colour—with the exception of a very few quite black granules in the centre of the comedo—vanished when it was treated with boiling with hydrochloric acid. The blue pigment exhibited least resistance to the acids. While the diffuse pigment and the brown and black granules paled only under the strongest mineral acids, the blue disappeared already in very dilute muriatic acid, 25 per cent. acetic acid, etc. Since the form of crystallization could not be made out, Unna made experiments with many substances of a blue colour, and found that the behaviour with reagents, the colour, and the amorphous character all alike of the blue particles corresponded to that of ultramarine. He does not go so far as to assert that they are identical. The brown and black pigmentations, in their action with reagents, resembled the brown pigmentation of hair, since it became paler, as hair does, when treated with chlorine water, and in the same way became lighter under the influence of the prolonged action of peroxide of hydrogen, the chief ingredient of the "golden hair-wash" used by hairdressers. From this it is proved that the black point of comedos is not due to the accretion of dust. Two other questions were answered during this inquiry—one, whether the blue colour which some comedos exhibit when *in situ* is due to the blue granules discovered by Unna. He answers this decidedly in the negative. In such he found only a relatively small number of blue particles; and, besides, when such were squeezed out and placed on a white ground, the blue colour was no longer seen. It was evident that the bluish comedos here answered to Goethe's law (more fully developed by Brücke), that "semi-opaque (trübe) media appear reddish-yellow by transmitted, bluish by reflected light." Accordingly, when such were looked at by transmitted light, they differed little from the ordinary yellowish hue of comedones. The comedo, when enclosed in the dark follicle, was bluish; when free and by transmitted light, yellowish. The other question is a therapeutic one. It has been shown that the black diffuse pigmentation of comedones is only to be dissolved and removed by acids, and that, according to Unna, the cause of comedos is always due to closure of the sebaceous follicle by an abnormally dense cuticle. He therefore treats these by means of acids, with which the ordinary management of acne (by sulphur, soft soap, mercurial applications, etc.) can be combined. He prescribes—℞ Kaolini pp. iv., glycerin pp. iij., aceti. pp. ij.—with or without the addition of some æthereal oil. This salve is to be rubbed in at night, when possible also during the day. The eyes must be kept shut when the inunction is proceeded with. Under this treatment the comedos within a few days are more easily pressed out; indeed, most are removed by simple washing with pumice-stone soap. At the same time the appearance of new black points ceases, while those already present become pale and disappear without the trouble of squeezing them out. The preparations of sulphur on the one hand, of lead and mercury on the other, can be suitably combined with this salve. Alkaline treatment, such as Zeissl's paste of sulphur, and carbonate of potash, is incompatible with its use, but simple washing with soap is not excluded. The action of acids must, then, be referred to two chief points. They act directly as cosmetics, since they gradually change the black coloration into brown and yellow, and finally destroy it, an effect reached by no other means; and secondly, they bring about an increased desquamation of the cuticle, which loosens the comedos and opens up the mouths of the glands.—*Virchow's Archiv für Klinische Medicin.*, Oct. 1880.

TINEA TRICHOPHYTINA BARBÆ.—Bulkley points out that when the parasite of tinea tonsurans becomes implanted on the hairy part of the face it may produce a red, more or less circular patch, covered with a moderate amount of scaling; and sometimes this condition may remain without the development of the more acute inflammatory state commonly recognised as parasitic sycosis. Occasionally ringworm may be developed on a patient who has already eczema or sycosis of the face. The two diseases may run on together and render the case an obstinate one. Eczema of the beard may simulate barber's itch very closely, more particularly scaly eczema, not very uncommon in this situation. The mode of development of the two diseases must be considered. The margin of the patch, again, in eczema, fades gradually into healthy skin, in ringworm is sharply drawn; and when both extend beyond the hairy parts this characteristic is most valuable. Itching, again, is more pronounced in eczema than in ringworm. In searching for the fungus by the microscope, occasionally no traces of spores or of mycelium will be seen until the specimen has been soaked for several hours in the glycerine and liquor potassæ used for examination. The treatment varies as to the condition of the parts, which depends largely on the duration of the eruption. Almost any of the preparations of mercury or sulphur serve to destroy the parasite quite readily when it has but a feeble and superficial hold on the skin, care being taken not to have such a strong application as to inflame it. Epilation is unnecessary as well as painful in very recent ringworm. When the disease has lasted some weeks or months this is quite different, since now the roots of the vegetation extend through the entire depth of the skin, even, if not quite, nearly to the subcutaneous tissue. With the hairs we extract some of the fungus, and open the follicle to allow the better penetration of the medicaments. All the hairs should be extracted from each spot or diseased region, and in as short a time as possible, so as to limit further extension. In one case cited, as many as 40,000 hairs in all were extracted—3300 at one *séance*. The agent used to destroy the parasite should be applied immediately after epilation, and thoroughly rubbed in, short of creating artificial inflammation. The ointment which Bulkley employs most has the following composition:—℞ Olei cadini ʒj., ung. hydrarg. oxid. rub. ʒij., ung. aq. rosæ (cold cream) ʒvj.—M. Tar and sulphur ointments in equal parts form an effective application. Oleate of mercury in five or six per cent. solution is cleanly and serviceable. —*Archives of Dermatology*, July 1880.

Part Fifth.

MEDICAL NEWS.

Medico-Chirurgical Society of Edinburgh.—The following gentlemen have been elected office-bearers of this Society for the Session 1880-81:—*President*, Dr P. H. Watson; *Vice-Presidents*, Professor Annandale, Professor Simpson, and Mr Joseph Bell; *Councillors*, Dr W. A. Finlay, Dr Playfair, Dr Andrew Balfour, Dr Foulis, Dr James Young, Dr Hamilton, Dr Jamieson, and Dr Church; *Treasurer*, Dr A. G. Miller, 11 Walker Street; *Secretaries*, Dr Cadell, 20 Castle Street, and Dr Brakenridge, 10 St Colme Street.

COLCHESTER IDIOT ASYLUM.—The high rate of mortality in this asylum as compared with other idiot asylums was referred to in our last number, and we have been requested to explain that weak and helpless cases are received at the Colchester Asylum, as well as healthy and trainable cases; that there is no restriction as to age; and that cases are allowed to be re-elected again and again, with a certain proportion re-elected *for life*. The Darenth statistics referred only to cases up to sixteen years of age. In the American schools and institutions (as they are called), and to a great extent at the Royal Albert Asylum, Lancaster, healthy and trainable cases only are eligible for admission (and then at first only upon probation), to remain for a limited number of years. The mortality at the Colchester Asylum must therefore be expected to be considerably greater, as *all* classes of cases are received, without restriction as to age, and some *for life*. This year, however, the mortality at the Colchester Asylum has only been at the rate of four per cent.

[As already said in last number, one would expect the mortality in the Darenth Asylum to be the highest of all idiot asylums, since Dr Beach gets, without any chance of refusal, a number of very young, scrofulous, ill-nourished London pauper children, with all kinds of nervous diseases. We have always heard well of Mr Millard, the superintendent of the Colchester Asylum, and we are pleased to learn that the mortality has this year fallen by more than one-half. Of course, the death-rate of an asylum may be exceptionally high one year. In that case, those responsible had better fall back upon the mortality of a longer period, say ten years. We have not the materials for doing so with Colchester; but we notice in the medical officer's report (March 1878) that he says, "There have been 10 deaths during the year. This is slightly above the average." The number of patients seems to have been about 98; by law it cannot exceed 100, as there is no resident medical officer. The average mortality is therefore about ten per cent. We have neither time nor space to sift the observations about the Royal Albert Asylum at Lancaster, where the death-rate is so low; but we cannot see how Colchester Asylum differs from Earlswood in any point bearing on the matter under discussion.—*The Author of the Review.*]

HYDATIDS IN AUSTRALIA.—If further evidence were needed of the extreme frequency with which hydatid tumours are met with in Australia, the fact that in two numbers of the *Australian Medical*

Journal, those for January and May 1880, no fewer than nine cases are recorded, would be enough to prove it. Of these, the two most interesting are,—one mentioned by Mr Gray, where a boy came under his care, who, with perfect vision in both eyes, had the globe of one protruded two inches and a half from the edge of the orbit. A puncture permitted the escape of the characteristic hydatid fluid. The opening was then enlarged, and fourteen cysts removed from the back of the orbit. The cavity was then washed out with carbolic acid lotion. Soon after another cyst was taken away by Dr Moloney, and then the eye regained its normal position. The other was a case under the care of Mr Fitzgerald at the Melbourne Hospital, where recovery took place after abdominal section had been performed for the removal of a hydatid tumour connected with the omentum and liver. The patient was a widow, aged 47, who had, since her second confinement twenty years before, been troubled with a lump in her side, which appeared suddenly, but of late had grown large. Occupying the whole of the lower part of the abdomen was a large pyramidal tumour, elastic and freely movable, except anteriorly, where it was adherent to the abdominal walls. The superficial abdominal veins over the surface of the tumour were tortuous and dilated; an indistinct succession wave was felt on palpation. The lateral boundaries of the tumour were best indicated by a line drawn crescentically from a point about two inches above the umbilicus to the anterior spinous process of the ilium on each side. When aspirated, purulent fluid was drawn off, without cysts or hooklets, and an ovarian cyst was diagnosed. When, however, Mr Fitzgerald operated, ten pints of thick puriform hydatid fluid came away through the canula, with many daughter cysts. The parent cyst had many and strong attachments to the omentum, transverse colon, and right lobe of the liver, from which latter it seemed to have originated. A pedicle was made of the portion attached to the left lobe of the liver, and this was ligatured and fixed by means of hare-lip pins. The whole operation was conducted with antiseptic precautions, and the peritoneal cavity washed out with a tepid carbolic solution. Some hæmorrhagic oozing had eventually to be restrained by the actual cautery. The patient was convalescent on the twentieth day. In course of some remarks which were made, Mr Fitzgerald said that in his last six cases of operation for ovarian tumour he had employed warm carbolic lotion (1 in 150) very freely, and recovery took place in every instance. In no case did symptoms of poisoning occur, though the urine was carefully examined.

OBITUARY.

Dr WILLIAM LAUDER LINDSAY.

We find it a melancholy task, after writing an obituary notice of James Lumsdaine Bryden for the December number of this Journal, to have to perform a similiar duty for William Lauder Lindsay. He was, like Dr Bryden, a native of Edinburgh, and educated at the High School. He showed an early disposition for the sciences, especially geology. He took the degree of M.D. at the University of Edinburgh in 1852, gaining a prize for a thesis upon lichens. His experiments upon the communicability of cholera to the lower animals, made in the Cholera Hospital in Edinburgh, and published in the *Edinburgh Medical and Surgical Journal* (April and October 1854), at once attracted the attention of the scientific world both in this country and in France. We think that he has the first claim to have communicated cholera to animals, dogs and cats, through the rice-water evacuations.

In 1853 Dr Lindsay became Assistant Physician to the Crichton Asylum at Dumfries, which at that time enjoyed a great celebrity under the superintendence of Dr W. A. F. Browne, afterwards Commissioner in Lunacy. Quick and generous in his appreciation of talent and worth, Dr Browne at once recognised the intellectual powers of Dr Lindsay. Speaking of his assistant in his annual report, Dr Browne wrote, "He is to psychology a coming man."

Dr Lindsay was not long at the Crichton Institution before he was offered the post of Physician to the Royal Murray Asylum at Perth, where he went towards the close of 1854. He used to say that he would never become a candidate for any situation to obtain which begging for testimonials and canvassing were required, and we doubt not that he kept his word; though he was careful in collecting and reprinting the favourable notices which his works, lectures, and services had obtained. When he first came, the Murray Institution was an hospital for the treatment of insane of all ranks, but in 1863 the pauper patients were removed. We believe that it was at that time proposed to add to the existing buildings a pauper asylum, such as had been done at most of the Royal Asylums, and that there should be an asylum for the richer and poorer classes under one superintendent. But this did not meet with Dr Lindsay's approval. He would never have an assistant, and acted as his own secretary.

Dr Lindsay never sought any other post. He remained at the Murray Institution for twenty-five years, leaving in November 1879 on account of failing health. Unhappily the ease and retirement of which he had often spoken did not bring back his strength, and he died at Edinburgh on the 24th of November last, aged fifty years. We have been told that the death of his wife, about four years after their marriage, made a very deep and lasting impression upon his mind. He leaves one daughter. His only surviving brother, Dr James Murray Lindsay, is now superintendent of the Derby County Asylum. The last time we saw Dr Lauder Lindsay he lamented that bad health, which had oppressed him so long, had prevented him concentrating his energies on some great work. Nevertheless his scientific labours, though somewhat fragmentary, are really astonishing. His first separate publication was, we think, *A Popular History of British Lichens*, published in 1856. He received in 1859 the first Neill prize of the Royal Society of Edinburgh for original investigation into the structure of lichens. He scattered the results of his multiform studies in papers sent to a great variety of periodicals. His literary activity was enormous. He wrote not only upon insanity, but also on botany, natural history, geology, chemistry, education, even upon the diseases of animals.

During a long leave which he gained to recruit his health he made a voyage to New Zealand, and on shorter holidays he visited Norway, the Faroe Islands, and Iceland. He wrote papers on the botany, natural history, and geology of these regions. He had also seen most countries of Europe, and crossed the Atlantic to America. In 1875 he published a carefully compiled pamphlet on *The Superannuation of Officers in British Hospitals for the Insane*, in which he advocated the duty and expediency of allowing liberal retiring pensions for the servants of every grade in lunatic asylums. In 1877 was published his long-promised work on *Mind in the Lower Animals*. It was announced to appear in the International Scientific Series, but the publishers recoiled at the size of his MSS. This was quite characteristic of Lauder Lindsay. No novice in literary undertakings, he could not be ignorant that people nowadays are averse to read long books; but so full was he of the importance of his subject that he would not abate one page. The work appeared in two thick octavos, and is full of learning, research, and observation. It contains a great deal of interesting matter; but the desire to exalt the intellectual and moral qualities of the lower animals leads him to depreciate the surpassing powers of the human mind to a degree which is clearly paradoxical. One would think he was writing to gain the praise of beasts, or that he expected them to become extensive purchasers of his book. Since the time of Swift no one has, comparing man with beasts, given harder hits at human selfishness, brutality, and stupidity. But Dr Lindsay had neither the wit nor the misanthropy of the Dean. It was not that he disliked men, but that he liked animals. He felt very deeply the cruelty and oppression inflicted upon them by the thoughtlessness, selfishness, and ferocity of human beings. He proposed to have an hospital erected for sick animals, and offered a prize for the best essay on the Moral Education of the Anthropoid Apes. The most novel and valuable part of *Mind in the Lower Animals* was the chapters on the varieties of insanity that are met with in beasts. An American edition of the book appeared in New York. He announced his intention of writing as a sequel, a work entitled, *The Soul and its Immortality in Man and other Animals.* Clearly it was the logical outcome of his opinions on the identical character of the mental faculties in man and the lower animals that immortality could not be possessed by the one without being extended to the other. This view seems to have been held by Agassiz.

It is likely that Dr Lindsay has left a number of MSS., and he occasionally promised works which never appeared. We regret that the world has not yet seen the volume which he announced a few years ago, *On Popular Errors concerning Insanity and its Treatment.* As announced in a printed syllabus, he was to show that an improved knowledge of the pathology of insanity has led to no improvement in methods of treatment nor added to the number of recoveries. He promised to expose the faults of asylum attendants, the shortcomings of lunacy boards, and the too frequent meddlesomeness, stupid blunders, and injustice of directors. It is not likely that the reason why the work failed to appear was the fear of provoking a number of people who had peculiar opportunities of retaliating. Some of what was promised saw the light in the *Edinburgh Medical Journal* for April and June 1878, in a communication on the "Theory and Practice of Non-restraint in the Treatment of the Insane." In these articles Dr Lindsay pointed out with great force and clearness the shallowness of "the principle" that mechanical restraint should never be used in treating the insane, and showed that in some cases it is preferable to manual restraint, and, indeed, could not be omitted save to the prejudice of the patient. Dr Lindsay acknowledged that such cases were rare, and he himself had seldom recourse to restraint or seclusion in any form.

Dr Lauder Lindsay was very eccentric. It was not an occasional flight of originality, but eccentricity was the natural course of his orbit. He possessed moral courage to an extraordinary degree, and, though very kind-hearted, did not shrink from telling the truth because it was unpalatable. "That is my goddess," said he to me, pointing to a framed engraving of a female figure hanging above the mantelpiece of his library, "Nuda veritas." "The truth gives offence to some people," he added, "but I cannot help it." He was always in earnest, and had a passionate energy which coloured everything he did and said. It is likely that many of his retiring habits were owing to ill health and dislike to have his regimen commented upon. Though latterly a recluse, he was always fond of a tough debate. His curiosity, the desire to know, was great, and his intellect very acute, but his talents and taste tended strongly to the perceptive sciences. With all this he did not want practical good sense, was a careful superintendent, and a good physician. His asylum, which was not a large one, was a perfect model of good taste, order, and neatness. Altogether, William Lauder Lindsay was a very remarkable man. The sphere in which he moved was hardly commensurate with his abilities, but he did good and true work, spent his leisure in the study of nature, and passed away unstained by the world.

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THE BOSTON
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OBSERVATION

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*A Case of Malignant Disease* (*Sarcoma*) *of the Lung.* By THOMAS R. FRASER, M.D., F.R.S., F.R.C.P.E., Professor of Materia Medica and of Clinical Medicine in the University of Edinburgh.

(*Continued from page* 587.)

Third Stage.—The third stage in the narrative of this case extends over the period from the establishment of the lung condition which has been described (22d of January) until the occurrence of a fatal termination. It was marked by rapidly advancing feebleness and emaciation, and by increase in the size and number of the external tumours. During it, however, the physical signs connected with the thoracic disease did not undergo any important modification. In fact, the only noteworthy modification connected with the pulmonary symptoms consisted of variations in the distinctness of the vocal fremitus, and, to a slight extent, in the auscultatory signs. For example, on the 23d of January the vocal fremitus was again found to be absent until the patient was directed to cough, when it reappeared for a few minutes, though only in an indistinct form, and was accompanied at the upper and lateral regions with faint bronchial breathing. On the 31st of January the vocal fremitus was well marked over a great part of the affected lung, where distant bronchophony and bronchial breathing could also be detected; and variations of a similar kind were from day to day observed. In accounting for these variations, the view was adopted that they depended upon temporary occlusion of otherwise patent bronchial tubes by mucopurulent matter and the *débris* of the malignant deposit. The dulness of the left lung remained unchanged in its absolute character and distinctly definable limits; but during inspiration slight retraction was now observed in the second intercostal space.

Over the right lung, the physical signs, with the exception of puerile breathing, remained of an entirely negative description, at any rate until a few days before death, when the extreme feebleness of the patient prevented further examination.

Examination of the posterior portion of the chest continued to be impossible on account of the distress which was produced by the slightest change of posture. This was all the more to be regretted as about the middle of February a gnawing pain began to be felt in the region of the left scapula, and continued there until the death of the patient. We could only ascertain that it was not produced by any tumours on the outside of the chest.

On several occasions the sputum was examined microscopically. It was found to contain a few irregular oval cells, and many rounded cells, differing considerably in size, and containing nuclei and oily and granular contents.

During the last four or five weeks of the patient's life the skin was usually moist with perspiration.

Tumours.—During the second stage of the case five separate tumours existed, which had been detected in the following order:—A tumour attached to the left acromion, which was present on the 4th of November, when the patient was admitted into the Infirmary; one below the left clavicle, which was first seen a few days after her admission; one above this clavicle, which appeared about the 14th November; and one attached to the neck of the right femur, and another to the middle of the right humerus, which were both detected on the 17th of January.[1]

Early in the third stage of the case—on the 26th of January—a sixth tumour of small size was discovered over the left clavicle, nearly midway between the infra- and supra-clavicular tumours of the same side, and, like the latter, unattached to the bone or skin, and having the characters of a glandular enlargement. A few days afterwards other two similar tumours appeared at the root of the neck, on the same side.

The three chief tumours at the left shoulder were measured on the 28th of January. That over the acromion had then attained the size of three inches in length by two inches and a quarter in width; that below the clavicle, two inches by one inch and a half; and that above the clavicle, one inch and a half by one inch and a quarter. They were again measured on the 27th of February, when the tumour over the acromion was four by three inches; the tumour below the clavicle, three by two inches; and the tumour above the clavicle, two by two inches. The other tumours also increased rapidly in size, so that early in February the one on the right humerus was nearly the size of half a hen's egg, while the one at the right hip was even larger.

The increase in size was most conspicuously noticed in the group of tumours at the left shoulder, whose margins gradually came closer together until they had coalesced early in March, so as to form one large lobulated mass extending from beyond the acromion process to the root of the neck, and across the clavicle to the second rib, and projecting downwards into the supra-clavicular fossa, so as apparently to occupy the place of the apex of the lung. The skin covering this lobulated mass became of a deep purple colour from the dilated condition of the superficial blood-vessels. Over the other tumours, however, the skin did not become discoloured, probably because of their less superficial position; and adhesions were nowhere formed between the skin and subjacent tumours.

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[1] The two latter tumours were no doubt present before the 17th of January, as pain and tenderness had existed for several weeks previously in the situations where they were detected. Their detection at this time may, no doubt, be explained not only by an increase in their size, but also by the decided emaciation of the patient.

Treatment.—The chief symptoms from which the patient suffered during the second and third stages were, as has already been stated, extreme feebleness, emaciation, and severe pain, aggravated by pressure, at the seat of the tumours. There was no dyspnœa. During the third stage the cough was only slight, and accompanied with but little expectoration, which was muco-purulent, somewhat viscous, and occasionally slightly frothy, but latterly altogether free from blood.

There was obviously very little indication for the application of remedies. The treatment was almost restricted to the administration of opiates to alleviate the suffering; and, fortunately, this object was pretty successfully gained by subcutaneous injections of morphia in the form of a solution of the bimeconate, occasionally combined with solution of atropia, and by the administration of opium in the solid form several times daily. The appetite was not impaired by this treatment, and the patient was able to take a tolerably good diet of eggs, milk, and beef-tea, with some whisky, until the day before her death. This event occurred on the 18th of March, and was immediately preceded by a rise of temperature, which had varied but little from the normal during the illness, and by an increase in the rate of the pulse, which throughout the third stage ranged between 100 and 120 per minute.[1] The period,

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[1] During the time the patient was under observation, the average monthly temperature and rate per min. of the pulse and respiration were as follows :—

	Temperature.		Pulse.		Resp.		Pulse-resp. ratio.	
	M.	E.	M.	E.	M.	E.	M.	E.
November (4th to 30th)	98·7	99·3	93	104	32	34	2·9:1	3 : 1
December . . .	98·7	99·1	100	101	27	26	3·7:1	3·8:1
January . . .	98·4	98·7	109	113	30	29	3·6:1	3·9:1
February . . .	98·7	99·1	109	113	25	28	4·3:1	4 : 1
March (1st to 17th) .	98·5	98·7	111	111	20	24	5·5:1	4·6:1
18th March (day of death) . .	101	...	130	...	24	...	5·4:1	...

The infrequency of the respirations relatively to the pulse, exhibited in the columns showing the ratio between them, may, perhaps, be accounted for by (*a*) irritation of the heart caused by a glandular tumour, afterwards found in contact with it, resulting in an increased rapidity of the pulse; and by (*b*) the painful condition of the external tumours interfering with respiration, and so checking any tendency to acceleration of the respiratory movements.

therefore, which elapsed between complete solidification of the lung and death was at least eight weeks and five days.

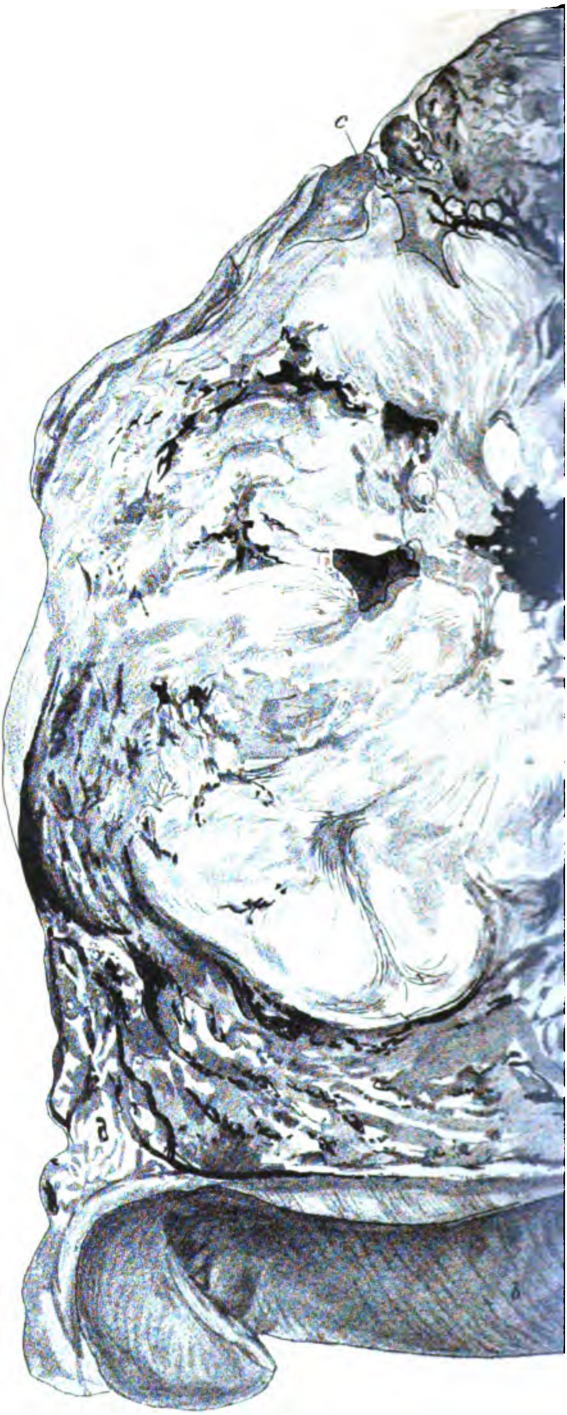
Autopsy.—The post-mortem examination was made on the 22d of March by Dr Hamilton, and the description which I shall now give of the morbid appearances is compiled from Dr Hamilton's notes, and from notes of a more detailed examination which was afterwards made of several of the diseased structures.

External Appearances.—Height, sixty-three inches; circumference at shoulders, thirty and a half inches. Body much emaciated.

Rigor mortis fairly marked. Right leg bent at the knee and drawn upwards. Lividity almost absent. No local discoloration of the skin. Pupils medium size. A lobulated tumour occupied the left shoulder and lower part of the neck, about the size of a cocoa-nut. It appeared to be attached to the clavicle, and had a soft, flesh-like feeling. Some of the bloodvessels in front of the chest were large, and two of them were apparently calcareous, standing out like hard cords. In the middle of the right arm, and also at the right hip, there was a tumour similar to that at the left shoulder, but smaller in size, and each of these tumours was firmly attached to the bone. The glands in both groins were enlarged, those in the right being larger and more indurated than in the left.

Lungs.—There were continuous fibrous adhesions throughout on the left side, most dense posteriorly, especially towards the vertebral column, where all the structures were matted together by old adhesions. The adhesions were much more dense over the lower than over the upper lobe, the difference on each side of the sulcus being very marked. Above the sulcus the pleura presented a minutely granular appearance suggestive of recent change; while below it, and over the whole of the lower lobe, the appearance was that of a dense, opaque membrane. The pleural surfaces in the sulcus separating the two lobes were also adherent. The diaphragmatic pleura on this side was much thickened and adherent. The right pleural surface was also adherent behind at the vertebral column, but it could be readily detached, and the surface was marked by fine granulations. A little roughness was also observed on the diaphragmatic pleura of this side. The anterior surface was normal. The left lung measured from apex to base seven inches, antero-posteriorly three and a half inches, and transversely five inches. Its apex was flattened, and extended only slightly above the level of the clavicle, having apparently been pressed down from the supra-clavicular space by the subcutaneous tumours which were situated there. The right lung measured from apex to base nine and a half inches, antero-posteriorly three and a half inches, and transversely five inches.

Left Lung.—The left lung was totally solid, and gave a dull percussion-note throughout. On section (antero-posteriorly) the centre was found to be occupied by a large consolidated mass which reached the surface of the lung posteriorly, where it had formed an attachment to the third and fourth ribs. From the



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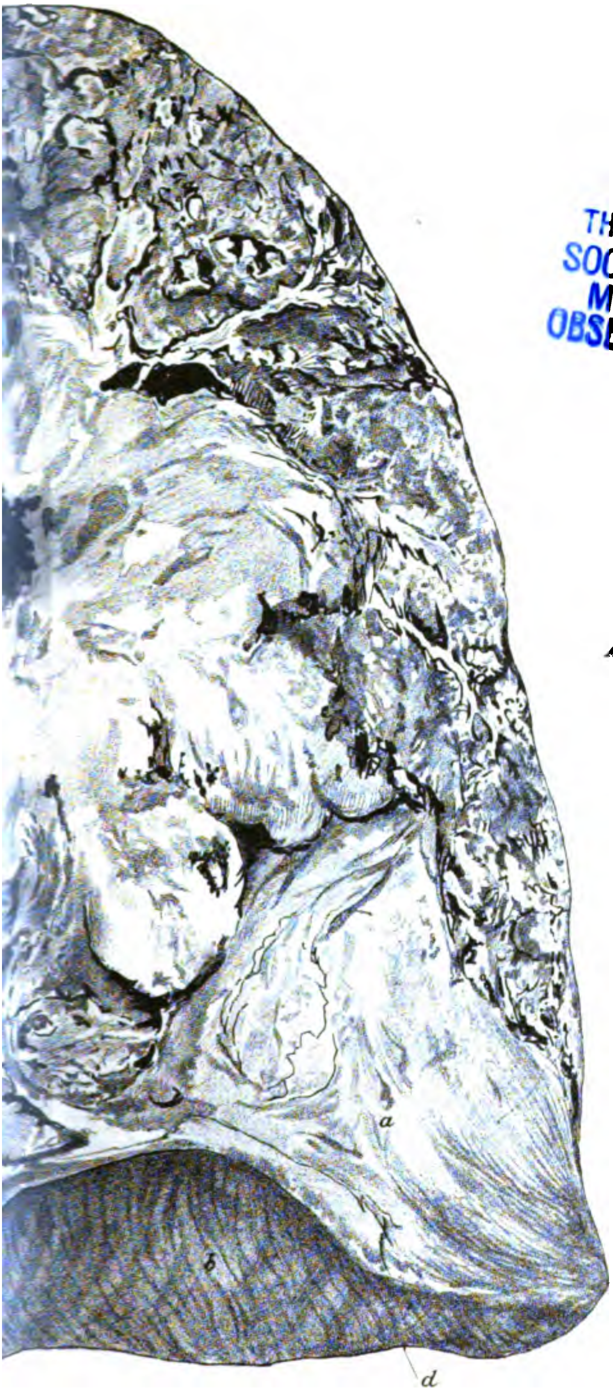

Anterior Margin.

anterior, upper, and lower margins of this mass, processes extended outwards into the lung in a somewhat stellate manner. It was, on the whole, somewhat circular in shape, had a diameter of four inches, and a somewhat pinkish colour, with a few yellow spots scattered about it. Several bronchi were found running through the mass, and a quantity of a dull pinkish and pultaceous fluid was contained in them. The comparatively small portion of surrounding lung-tissue was in a state of collapse and carnification (see Plate).

Some of the bronchial glands on this side were enlarged, and protruded into the pericardium so as to impinge against the left auricle and pulmonary artery. When the pericardium was cut open the protruded mass presented the appearance of a tumour measuring three inches vertically and one and a half inch antero-posteriorly (see Fig. 1). The protruded pericardium was found to be adherent on its right side to the pericardium covering the left auricle and the vessels at the left side of the base of the heart, and on its left side to the surface of pericardium in contact with it. The adhesions, however, could be very easily separated, and the separated surfaces were injected and covered with fine granulations. The interior surface of the posterior portion of the pericardium, excepting about an inch at the apex of the heart, was covered with fine granulations, which were most distinctly seen at the upper portion. The anterior portion was perfectly normal and smooth. The heart itself was small, but its weight was not ascertained, as the thoracic viscera were removed *en masse*.

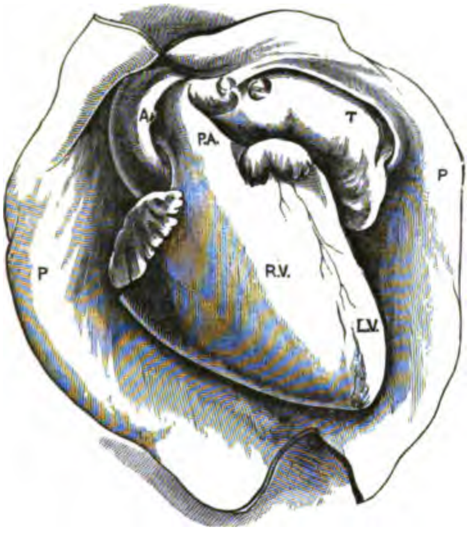

FIG. 1.—Showing the relation of the glandular tumour to the heart. T, tumour; P A, pulmonary artery; A, aorta; R V, right ventricle; L V, left ventricle; P, pericardium cut open. The interior of the heart has been distended with cotton-wool.—From a drawing by Mr J D. Dunlop.

Right Lung.—The right lung was somewhat emphysematous. On section it was considerably congested, and several of the lobules were solidified, apparently from catarrhal pneumonic effusion in the first stage.

Spleen.—The spleen was anæmic, and weighed 3½ oz.

Kidneys.—The left kidney weighed 5 oz. There were several cicatricial-looking depressions on its surface, apparently the result of old infarctions. The calices contained a quantity of salts, afterwards found to consist of phosphates and urates. The right kidney weighed 4½ oz. There was a cyst on its surface. The pelvis and calices were filled with small calculi and granular urinary salts (phosphates and urates).

Liver.—The liver weighed 3 lbs. 7 oz., and appeared to be healthy. The gall-bladder was distended with olive-green-coloured bile.

Uterus.—The cervix uteri was very much swollen, and the lips protruded downwards into the vagina for a considerable distance. The os was hard and rigid, and its cone diameter was two inches. The fundus was large, and also indurated, and had several little nodular tumours protruding from its peritoneal surface. On section the walls were seen to be much thickened, and the cervix appeared as if infiltrated with some new tissue. The mucous membrane and cervix were seen to be the parts in which the thickening was greatest.

Ovaries.—The left ovary was solid and calcareous throughout, and contained several cysts, in one of which was found some olive-green-coloured fluid, in another some purple-coloured fluid, and in the others straw-coloured fluid. The right ovary was apparently healthy.

Bladder and Rectum.—The bladder and rectum were free from disease. The mesenteric glands were all somewhat enlarged. The abdominal aorta seemed healthy.

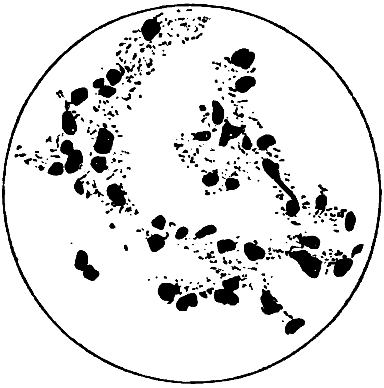

FIG 2.—Hartnack: oc. 4, obj. 7; tube drawn out. (Stained with logwood.)

Microscopic Examination.—Subsequently to the autopsy a microscopic examination was made of several of the more important tumours. On the pleural surface of the third left rib, near its vertebral extremity, a tumour was found which was attached to and extended along the bone, beneath the thickened pleura, for about an inch and a half outwards from the position where the lung tumour was in direct contact with the ribs. It had a reddish-yellow colour on the surface, and a cream-coloured interior, and was of rather a soft, fleshy consistence. A pultaceous creamy fluid could be readily obtained from it by pressure, and when examined microscopically this fluid was found to consist of rounded and irregularly oval cells, containing nuclei and granules (see Fig. 2). The tumours from the right hip and arm and from the left shoulder presented exactly the same naked-eye and microscopic appearances.

Microscopic examination of a section through the large consolidated mass of the left lung showed elastic fibres, and fragments of alveoli completely infiltrated with rounded and irregularly oval cells containing nuclei and granules. When a scraping was examined, it was seen to consist chiefly of rounded and oval cells with similar contents (see Fig. 3). Beyond the margin of this mass, in the apparently carnified portion of the lung, a number of small patches were seen, which resembled the large mass in colour and consistence. A scraping from the surface of one of these patches was examined microscopically. It was found to consist almost solely of rounded cells, having exactly the same characters as those in the large consolidated mass.

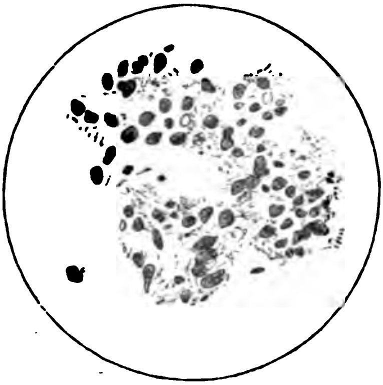

FIG. 3.—Hartnack: oc. 4, obj. 7; tube drawn out. (Stained with logwood.)

Sections and scrapings of several parts of the right lung were also examined with the microscope; but the only abnormal appearances observed were thickening of the walls of the alveoli, and the occurrence of numerous large round cells resembling lymph or epithelial cells, of deformed blood-corpuscles, and of irregular-shaped granular and fatty bodies.

The general symptoms and physical signs observed during the life of this patient had led to the diagnosis of infiltrated malignant disease of the greatest part of the left lung; of pleurisy of long standing at the posterior portion, and of more recent date at the anterior portion of the left lung; of pericarditis, especially affecting the base of the heart's covering; of emphysema, latterly restricted to the right lung; of enlargement of the left ovary; and of malignant growths under the skin, and in some instances attached to bone, in the situations which have been described.

It will therefore be observed that the post-mortem examination confirmed, in every important particular, the diagnosis which was so clearly pointed to. It is, indeed, for this reason that I have considered the case of sufficient interest to bring before the Society; for it does not often occur that malignant disease of the lung presents itself to observation in so unmistakable a form, unattended with distracting complications, and manifesting its existence by physical signs whose significance could hardly be overlooked.

EXPLANATION of PLATE.

Surface of the outer half of the left lung, exposed by an antero-posterior section. The section has not been made in a true antero-posterior direction, but sloping from the front slightly to the left. *a*, Pericardial surface of the pleura (thickened); *b*, lower surface of the diaphragm; *c*, summit of the lower lobe and of the sulcus; *d*, point corresponding to the lower extremity of the sulcus at the posterior part of the lung.

ARTICLE II.—*Method of Case-Taking in Midwifery.* By ALEXANDER RUSSELL SIMPSON, M.D., F.R S.E., Professor of Medicine and Midwifery and the Diseases of Women and Children in the University of Edinburgh.

(*Communicated to the Edinburgh Obstetrical Society, 8th December* 1880.)

THE method of case-taking hitherto followed in our Maternity is unsatisfactory. I suppose my colleagues have felt this, as I have felt it, more keenly since we began to present quarterly reports of our *res gestæ* to this Society. Dr Croom has prepared a scheme according to which the results of each quarter's observations may be systematically reported. I have set myself the task of preparing a sheet for registration of the various points relating to each individual case.

At first I thought of drawing up such a card as I showed to the Society last year,[1] and which we use in the gynecological department of the clinical class for guiding the clerks in taking their cases. But I bethought me that in the continental maternities which I had visited the history of each patient was kept on a sheet carefully spaced out, and having in each space a word or two printed as a rubric to indicate the facts or phenomena to be recorded in it. Following their example, and guided by the study of a series of their protocols which I collected in a recent visit to Germany, Switzerland, and Belgium, I have drawn up the midwifery recording sheet which I now submit to the Society. I will be glad of any suggestions that will help to make it more complete and serviceable. Though it is headed "Edinburgh Royal Maternity and Simpson Memorial Hospital," Messrs Maclachlan & Stewart, who furnish them to us at the rate of 8s. a hundred, are prepared to furnish similar sheets at the same rate to any lying-in hospital, or to any private practitioner, with an appropriate heading.

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[1] See my *Contributions to Obstetrics and Gynecology.*

EDINBURGH ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL.

Case of ....

No. *in Daybook.* *No.* *during Quarter* { .... / .... }

Admitted................ *Confined*............... *Discharged*..............

I. ANAMNESIS.

Name .... para. Age
Married. Single. Widow. Residence
Menstruation began at Type days. Duration days. Quantity
Date of last Menstruation from to
Stirrage first felt Probable date of Conception
Condition during Pregnancy—
Complications of Pregnancy—
Previous Obstetric History—

II. PHYSICAL EXAMINATION ON....................................

General Appearance
Breasts

ABDOMINAL EXAMINATION.
- Inspection
- Mensuration
- Abdominal Walls
- „ Cavity
- Palpation
  - *Uterus.*
    - Height of Fundus
    - Direction
    - Size
    - Form
  - *Fœtus.*
    - Head
    - Back
    - Limbs
- Auscultation
  - Uterine Bruit
  - Fœtal Heart
  - Other Sounds

VAGINAL EXPLORATION.
- External Pudenda
- Vagina
- Cervix and Orifices
- Fœtus
- Rectum and Bladder

Pelvis { Il. cr............. Il. Sp............ Inter-trochant.........
Ext. Conj...... Diag. Conj...... True Conj................

Diagnosis of Presentation..

" Position...

Prognosis { Date of Labour..
Character..

III. LABOUR ON..

Pains began Their character

Os fully dilated at Waters escaped at

Presentation

Position

Mechanism—

Duration of Stage I. II. III.

Artificial Interference—

PECULIARITIES—

CHILD.
- Condition
- Development
- Sex Length Weight
- Head.

	O. M.	O. F.	S. O. B.	Bi.-P.	Bi.-T.	T. B.	
Diameter							Caput suc.
Circumference							Markings

Placenta—Form Size Weight

Membranes Liquor Amnii

Cord—Insertion.......................... Length..................................

Convolutions round Ch................ Contortions...............

IV. PUERPERIUM.

.... as on Special Sheet

V. CONDITION ON DISMISSAL ON..............................

MOTHER.
- General
- Breasts
- Uterus { Size
  - Position
  - Os
- Vagina
- Pudenda
- Other Pelvic Tissues

CHILD. { General
Mode of Nutrition
Umbilicus

The first page begins with an indication of the nature of the case recorded on it, according to the class of labour to which it belongs. In my own records I intend that the residents shall register them according to the following classification of labour:—

I. NATURAL LABOUR.—Head alone presenting, and the labour terminated within twenty-four hours.

II. LINGERING LABOUR.—Head presenting, but labour delayed beyond twenty-four hours.

III. INSTRUMENTAL LABOUR.—The labour needing to be terminated by some operation—

1. Safe to mother and child—as forceps.
2. Dangerous to child—as embryulcia.
3. „ mother—as Cæsarean section.

IV. PRÆTERNATURAL LABOUR, including—

1. Pelvic presentations.
2. Transverse „

V. COMPLEX LABOURS, presenting complications—

A. On the part of the mother—as,

1. Hæmorrhage.
2. Rupture.
3. Convulsions.
4. Thoracic and abdominal diseases.
5. Inversion of the uterus.

B. On the part of the child, as—

1. Prolapsus funis.
2. Twins.
3. Monsters.

The indication of the kind of case is followed by the note of the patient's number in the Maternity day-book, as well as of her number in the quarter of the physician on duty, and of the dates of her admission, confinement, and dismissal.

I. ANAMNESIS.—The first of the five sections into which the full record of each case naturally divides itself occupies the greater part of the first page. This is the so-called anamnesis, or information to be gained by questioning of the patient.

The first space contains her name and age, an indication of the number of her conception, whether she be—I. Para, II. Para, III. Para, or what. In the second space the pen will be drawn through the words "single," and "widow" if she be a married woman. The third space will receive the note of her usual menstruations, as to the age at which they first appeared; their type or cycle, whether it be the usual twenty-eight days or some deviation from it; the menstrual habit, as to the number of days the flow continues, and the quantity, whether it be free, moderate, or scanty. The fourth space will tell the date at which the last catamenia began and ceased. The fifth will contain the date of so-called quickening at which the patient first noticed the stirrage of the fœtus, and the probable date of conception, if any special circumstance have led her to assign a definite date for it. The remaining wider spaces give room for remarks as to her general condition during the present pregnancy, or the history of any special disorders that may have complicated its course, and for the full record of the previous obstetric history of women who have had earlier conceptions.

II. PHYSICAL EXAMINATION.—As a rule it is advisable to make as careful and complete an examination of every pregant female as possible at our first interview with her. The second page of our protocol is intended to record the results of such an examination. It will certainly not be necessary in each case to make a note in reference to every point indicated on this page, but I do not think there are any superfluous spaces in it.

The first space will note the patient's general appearance, and may specify her height and weight when there is any marked deviation from the normal standards. The second space should tell the degree of development of the mammæ, the condition of the nipples, and the character of the secretion. The examination of the abdomen next falls to be undertaken, and the third space will give the result of inspection of the surface, the fourth the results of measurements taken round the umbilicus and from pubes to ensiform cartilage, while the fifth will indicate any œdema or other peculiarity in the abdominal parietes, and the presence of any other than the uterine tumour in the abdominal cavity. For the last ten years our students have been taught the importance of careful bimanual palpation in the examination of abdominal tumours, and especially in the examination of the gravid uterus, and most practitioners are now well aware of the value of the information thus to be obtained. A sixth broad space on this second page of our protocol will register the results of this abdominal palpation with regard to the position of the fundus uteri, and with regard to the direction, size, and form of the uterus generally, and will also register the relative position of the head, back, and limbs of the fœtus as these are recognised by palpation through the walls of the uterus in the intervals of relaxation of the muscular contractions. The seventh space gives the results of auscultation as regards, *first*, the position and character of the uterine bruit; *second*, the site, character, and rate of rapidity of the fœtal heart; and, *third*, any other sounds, such as the funic souffle, that may be heard in special cases. Another broad space is devoted to what I have called the vaginal exploration, although it includes examination of the external pudenda, and the conditions of the rectum and bladder. The notes as to the condition of the vagina, of the cervix and its orifices, and of the presenting part of the fœtus, are naturally found in the subdivisions of this "vaginal" space. Next, the pelvis has a space to itself, and the common measurements which it is useful in every case to take are specially registered. These are the ilio-cristal, ilio-spinous, inter-trochanteric, external conjugate, diagonal conjugate, and the estimated true conjugate of the brim. Room is left in this space for the entry of such of the oblique or other diameters as require special record in cases of individual deformity. The two last spaces in this page register the diagnosis formed of the presentation and position of the fœtus, and prognosis of the probable date of confinement and character of the labour.

III. THE LABOUR.—The largest section is devoted to the phenomena of the labour, and the third page is occupied with the various points requiring to be recorded during its progress. The first space notes the hours of the commencement of the pains and their general character, the second the hour of the full expansion of the external orifice of the uterus and of the escape of the waters. The third space will record the exact presentation and position of the child as these are definitely recognised during the progress of the labour. The fourth space will record the mechanism of the labour, or the movements impressed upon the head or other presenting part as the fœtus traverses the passages. The fifth registers the respective durations of the three stages of labour. A sixth wide space gives room for the record of any kind of artificial interference which it may have been found necessary to resort to; and a seventh still wider space is provided for entering any peculiarities that may have been observed in regard to the powers, the passages, or the passenger, individually or in their mutual relations.

We turn to the fourth page, and continue the record of the labour as it regards the child. Its first space notes its condition at the moment of birth as to vitality or still-birth, strength or weakness; the next its development, whether full time or premature; and the third its sex, size, and weight. A fourth important space is constructed to receive the measurements and markings of the fœtal head. Of the measurements, squares are arranged for noting both the diameter and the circumference of the occipito-mental, occipito-frontal, and sub-occipito-bregmatic planes; whilst of the transverse and perpendicular measurements the bi-parietal, bi-temporal, and trachelo-bregmatic, only the diameter requires record. Room is left for noting the site of the caput succedaneum and any special markings that may be observed in particular cases. The placenta has then a space for itself, to record its form, size, and weight. Following it is the space for noting the condition of the membranes and the quantity and quality of the liquor amnii. The last space of this section is occupied with the umbilical cord, giving its place of insertion in the placenta, whether central, marginal, or intermediate, its length, the number and course of its convolutions round the child, and the number and course of its own contortions or twistings.

IV. THE PUERPERIUM.—A space in the main sheet may note the general character of the puerperium, but the daily record is entered on a special sheet, ruled so as to contain the notice of the maternal temperature, pulse, respiration, lochia, etc., and having a narrower column for remarks as to the state of the infant.

V. DISMISSAL.—The last section is devoted to a record of the result of the examination which ought to be made of every patient who is passing from under our care. The special maternal spaces are for—1*st*, her general condition; 2*d*, the state of the breasts; 3*d*, the size and position of the uterus, and the state of the os; 4*th*, the state of the vagina; 5*th*, of the pudenda; and, 6*th*, of any of the other pelvic structures that may be found disturbed or diseased. The last three spaces record the general condition of the infant, the mode of its nutrition, and the condition of the umbilicus.

I have tried to make the record full enough to contain all that is likely to be worthy of note in any case of labour and its consequences, without entering into unnecessary details as regards, *e.g.*, the colour of the infant's eyes, and other points which are noted in some of the more copious records. I am, however, very willing to believe that it is quite capable of emendation, and am prepared, as I have said, to welcome any suggestion for its improvement. Just let me add that the sheets may be kept in one of Stone's boxes, No. 6, large quarto size, into which they fit very accurately, and in which they remain clean, orderly, and easy of reference.

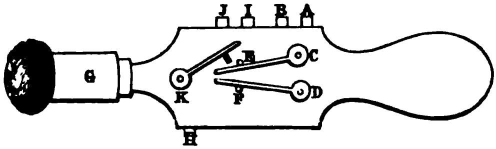
ARTICLE III.—*Note on a New Form of Rheophore and Galvanic Battery for Medical Use.* By JOHN WYLLIE, M.D., Senior Assistant-Physician to the Royal Infirmary.

DURING last autumn I had occasion to examine a number of the galvanic batteries and electrical instruments at present employed for medical purposes, and it occurred to me that something might be done to render the construction of a medical battery more simple and more convenient for actual use than it is at present. Many of the batteries now in favour have attached to them an apparatus for interrupting the current, another for reversing it, and a graduating dial by which the operator can bring into action any number of the cells that he may wish to employ. In one or two instances the battery also contains a Faradaic coil, and the operator can obtain the Faradaic electricity by turning the needle of the dial to a point which is in communication with the coil, so that in testing a paralysed muscle, he is able to send to it, through the same wires and rheophores, either a galvanic or a Faradaic current. But all such accessories render a battery complicated and expensive, and not a little liable to get out of order; and they have all this disadvantage, that in order to effect any one of the objects for which they are intended, the operator, if he has no assistant present, must move his hand to the battery when it would be convenient for him to have both hands employed in keeping the rheophores in position. One instrument in common use for interrupting the galvanic current is not liable to this objection. It is a rheophore by which the current can be interrupted on pressure of a spring with the finger. The convenience of this instrument led me to consider whether it might not be possible to concentrate upon a rheophore machinery of a simple character, by which one might obtain not only interruptions of the galvanic current, but also reversals of it, and the substitution for it of a Faradaic current from another battery. With such machinery upon one of the rheophores, all of these results could be obtained by mere movements of the fingers, and the rheophores could thus be held in the same position whilst a muscle was being tested by being subjected to the whole series of them. The battery itself might then be left quite unencumbered with apparatus, and would be the less expensive and the less liable to get out of order.

The mechanical rheophore which I now wish to describe is an instrument by which interruptions and reversals of the galvanic current, and alternations of the two currents, galvanic and Faradaic, can be obtained with very great facility.

The first peculiarity of the instrument that requires to be mentioned is that instead of being, like other rheophores, connected with only one of the wires of the galvanic battery, it is connected with both wires. Both currents, negative and positive, therefore, traverse the instrument on their way to the patient, one of them reaching the patient by the sponge affixed to the instrument itself, the other passing by a wire from the instrument to the companion rheophore, which is held in the operator's left hand. It will readily be understood that if, on the instrument, metallic levers are substituted for the conducting wires, and these levers be so placed that they can cross each other without coming into contact, a complete crossing of them will cause a reversal of the current, and an incomplete, an interruption of it. Such is the principle by which the reversals and interruptions are effected. The following diagram will probably make the matter intelligible, and it will also enable me to indicate the additional provision made for producing the alternation of the galvanic and Faradaic currents. The diagram shows, also, the form of the instrument, of which the body is a flat piece of ebony, measuring 7½ inches from the end of the handle to the screw for the sponge-holder.

A and B in the diagram represent two metallic sockets into which are received the terminations of the positive and negative wires from the galvanic battery, and C and D represent two brass pins which are in permanent metallic connexion with A and B. E and F represent two other brass pins, of which E is in permanent metallic connexion with the sponge-holder G, and F is in permanent connexion with the socket H, into which is received the end of the wire by which the instrument is connected with its companion rheophore. It may therefore be said that the pins C and D are connected with the battery, and the pins E and F with the patient. Between the pins C and D and the pins E and F the interval



is traversed by two metallic levers, which are hinged upon the pins C and D, and, in ordinary circumstances, are pressed by a spring against E and F. These levers work at different levels, and, without touching each other, can be made to cross the interval between E and F, so that each may pass from E to F, or *vice versa*. The moment their complete crossing is effected the current is, of course, reversed, and when they are allowed to return to their old position the current is again reversed. In the instrument these levers can be made to cross and recross with great rapidity, so that a paralysed muscle can be subjected to reversals of the current at the rate of between two and three hundred per minute.

To obtain an interruption of the current instead of a reversal, it is only necessary to see that the crossing of the levers shall not be complete, and it is sufficient for this purpose to interfere with the crossing of one of the levers, as there will be a break in the circuit if either of the levers fails to come into contact with the brass pin opposite to it. I have therefore put a little hook of vulcanite, which is a non-conductor, upon one of the pins, at a point which is touched by the opposite lever when a complete crossing is effected. In ordinary circumstances this little hook is pressed against the pin, and kept in position by a spring, so that its interposition prevents the contact of the opposite lever with the pin. I have not represented in the diagram either the hook of vulcanite or the contrivance by which the levers are moved, as the diagram would be made somewhat complicated by such details. I may say, however, that the levers are moved by means of a vulcanite ring, having arms of the same material, which are attached to the metallic levers. When the point of the forefinger is inserted into the ring, a pull backwards moves the levers so as to interrupt the current. In order to produce a reversal it is necessary, before pulling upon the ring, to press with the thumb the extremity of a vulcanite rod which terminates anteriorly in the hook above described. The hook being thus pressed away from the pin, a pull upon the ring with the forefinger will cause complete crossing of the levers and reversal of the current.

I now proceed to describe the mechanism by which a Faradaic current from another battery can be substituted for the galvanic current. Let I and J represent two metallic sockets into which the extremities of the two wires from a separate Faradaic battery are inserted. The pins E and F, as already said, are in connexion with the two sponge-holders. In order to transmit a Faradaic current to the patient it is therefore only necessary to bring the sockets I and J into connexion with the pins E and F. In the instrument the socket I is permanently connected with the pin F; as regards the socket J, its connexion with the pin E is not direct or permanent. This socket is connected permanently with the pin K, upon which is hinged the third or Faradaic lever figured in the diagram. Upon this lever there is fixed a little piece of vulcanite, which is so placed that when the lever is moved towards the pin E the piece of vulcanite pushes the galvanic lever from the pin before the Faradaic lever can come into contact with it. Thus the galvanic circuit is opened or interrupted and the Faradaic circuit is closed. The latter is closed because by the movement of the lever the socket J is brought into connexion with the pin E, the other socket, I, being permanently connected with the pin F. I have not represented in the diagram the mechanism by which the Faradaic lever is moved. It may be sufficient to say that a spiral spring holds the lever in the position represented in the diagram, and that the lever is brought into contact with the pin E by means of a vulcanite trigger, which is conveniently placed for the middle finger.

These are the chief points in the mechanism of this instrument. I may add that the two wires connecting each of the batteries with the rheophore are isolated with silk, and are twisted together so as to form a double cord. Two double cords are therefore connected with the rheophore upon one side, and on the other side a single wire passes from the instrument to the companion rheophore.

The instrument I have just described could, of course, be fitted to any battery, and I believe that it will be found to possess considerable advantages. Its adoption would, I think, do something to make medical batteries less complicated and expensive than they are at present. One of its chief advantages is the extreme facility with which, by its means, the effects of the two currents, galvanic and Faradaic, can be compared.

It is necessary, perhaps, to add a word of caution as to the manner of using this instrument when parts about the head and neck are being galvanized. In galvanizing these parts with more than a very small number of cells it is necessary to avoid any interruption of the current, as the effects of such disturbance of the current may be alarming. The sponges are applied gradually and removed gradually, so that as little disturbance as possible is produced when the circuit is closed and broken. If in such cases the instrument just described is used as an ordinary rheophore, it is necessary that its disturbing ring should be out of reach of the fingers; and to put the ring effectually out of reach, all that is required is that the instrument be held face downwards in the left instead of in the right hand of the operator, the simple companion rheophore being held in his right hand. With this precaution the mechanical rheophore can be used for all cases. If the operator should wish to use one of the special rheophores for the bladder, rectum, or larynx, one or other of these can easily be substituted for the simple companion rheophore, the mechanical rheophore being retained as the other electrode.

Along with the new rheophore I have had constructed a very simple and portable galvanic battery, containing sixty Leclanché cells. These cells, as is well known, do not evolve electricity except at such times as they are being used, and they require comparatively little supervision. A new pattern of Leclanché cell has the form of a small cylindrical glass bottle, and a number of these put simply into a box constitutes a very neat battery. To guard against oxidation I have had all the metallic connexions of the cells, as well as the metals of the rheophores, nickel plated, as is the case in Mr Coxeter's batteries. Instead of the ordinary graduating dial for determining the number of cells to be used, I have adopted the older and simpler plan of having at every third cell a socket into which the plug terminating the positive or negative wire can be inserted. This leaves the cells quite open to inspection, and it has the further advantage of enabling the operator to use any group of the cells with equal convenience. By using different groups alternately he can subject all of the cells to an equal amount of work, and thus obtain from the battery the greatest amount of work of which it is capable. The wires and other accessories of the battery can be carried in its lid.

The mechanical rheophore has been made for me by Mr Gardner, instrument maker, 45 South Bridge, and the battery by Mr Bryson, optician, 60 Princes Street. I understand that Mr Bryson and Mr Gardner are both prepared to supply similar batteries of sixty cells, with the rheophores and other accessories, at a cost of about £12, 10s. The rheophores, with wires, can be obtained from Mr Gardner for £1, 10s.

ARTICLE IV.—*Case of Large Congenital Cystic Tumour of the Left Side of the Neck, Simulating Encephalocele: Death after the Third Month, from Suppuration of its Contents and Meningitis.*

By KEITH NORMAN MACDONALD, M.D., F.R.C.P., etc.

THERE are several points of interest in connexion with this case, not only on account of its rarity, but also from a diagnostic and pathological point of view, inasmuch as that considerable difficulty was experienced during life in arriving at any definite conclusion regarding the nature of the tumour, its cause, relation to surrounding tissues, and especially as to whether it had any connexion with the meninges of the brain or not.

The impossibility of arriving at an accurate diagnosis will be apparent from the condition and relation of the parts affected, and from the following history of the case:—D. R., a healthy-looking boy, born at full term on the 21st July 1880, of healthy parents. There was nothing unusual about the labour except that it was delayed for six hours in the second stage, and terminated without instrumental interference. The mother was the wife of a farm-labourer, 40 years of age, confined for the eighth time, the seventh having produced twins. All her previous labours were normal, and there were eight of her children still living. When the head was born some difficulty was found in clearing the neck and shoulders. The tumour, however, was quite compressible, and the delivery was terminated without any undue expenditure of force in making tractile efforts. On examination, the tumour, which measured nine inches in circumference, occupied the whole of the left side of the neck, extending from below the symphysis, and running parallel with the body of the left side of the inferior maxillary bone, to beyond the ear of the same side, and hanging down over the left shoulder. There was a distinct sense of fluctuation in it, and it appeared to be divided into two compartments or lobes, communicating with each other by a slight sulcus or groove, which ran from the angle of the jaw vertically downwards, becoming less marked towards the shoulder. The unusual appearance gave rise to great alarm among the friends, but the mother herself was not immediately informed of the nature of the case.

Though the feeling of fluctuation was so distinct as to render the presence of fluid almost certain, there was also, towards its posterior aspect, a feeling of slight resistance, somewhat resembling the presence of a gelatinous fluid in a bag.

The unsightly appearance of the tumour, and the great inconvenience which it occasioned immediately after birth, both as regarded the dressing and position of the child,—lying upon the back being the only position practicable without giving rise to considerable discomfort and apparent pain,—that the question immediately arose, What could be done for it? The friends were very anxious to have it removed; and though I myself was inclined to temporize, yet I felt that as it was probably filled with serous fluid only, no harm could be done by removing it by means of the aspirator under antiseptic precautions, and accordingly, on the 24th July, three days after birth, I proceeded to tap the swelling, using a hand spray-producer for the carbolic lotion, which was of the strength of one to thirty, and drew off a pint of straw-coloured albuminous fluid, in which collected, on standing, a thick diaphanous, flocculent deposit, very slightly tinged with blood, and which coagulated on the application of heat, and was otherwise almost structureless, presenting under the microscope only a few very delicate filaments and pale oval bodies.

The withdrawal of the fluid was followed by immediate relief, so far as could be judged by the appearance of the child; it slept well for a couple of hours, and took its milk with avidity on awaking. A pad and roller of antiseptic gauze were applied to the neck, and gentle pressure was exerted in order to hasten the absorption of the fluid which would soon be resecreted into the cavity of the sac. We had not long to wait for this anticipated result, for in a few days the tumour again began to show symptoms of reappearing, but without producing any marked effect upon the child's health until the 16th of August, when it became uncomfortably large; and as the first tapping was followed by such marked symptoms of ease, I again determined to remove the fluid as before, under the same precautions, and with the same result as to quantity and composition.

As the child was now apparently thriving well, I resolved not to tap again for a considerable time, but rather to watch the progress of the case; and being rather doubtful as to whether the injection of a solution of iodine might not be safe at some future period, nothing further was done until the 25th of August, when I took advantage of consulting Dr Matthews Duncan, who happened to be residing in the vicinity at the time. He (Dr Duncan) considered the case an interesting and rare one, and was inclined to suspect that the meninges of the brain might be implicated, and advised close watching, caution, and perhaps subsequently tapping and the injection of a solution of tincture of iodine, as being the most likely measures of affording relief, but significantly remarked that "the case is one for the upshot of which we cannot answer." Matters were not, however, allowed to remain long dormant. The tumour continued to increase in size and became very troublesome, and on the 10th of October the child was seized with an attack of bronchitis, coughed a great deal, was very feverish and restless at night,—temperature 102°, pulse 130,—and at the same time the bloodvessels on the surface of the swelling became rather glistening and turgid, and to all appearance in a state of acute inflammation. Hot fomentations and poultices, and appropriate internal treatment, soon gave some relief, but the tumour continued to increase in size until it measured ten inches in circumference. There was now no chance of delaying the third tapping, which was accordingly performed, under the same antiseptic precautions as previously stated, on the 18th October; but this time, instead of the usual straw-coloured fluid escaping, I was surprised to find that nothing but fœtid pus came away—about 24 ounces.

It was now evident that inflammation had taken place in the sac of the tumour, and that the pyogenic membrane would probably go on secreting as often as the pus might be evacuated, but how it became fœtid is a mystery. Those who believe in the germ theory of disease could easily account for the presence of pus here—and I am myself a stanch upholder of the antiseptic system of treatnent; but even allowing that a few germs did gain entrance by adhering to the interior of the needle of the aspirator (which was previously dipped in an aseptic lotion), the rush of fluid to fill the vacuum in the receiver, from which the air had been abstracted, would prevent further entrance beyond the track of the needle, and I can scarcely imagine that any could be adherent to the external surface of the needle, and they could not possibly have gained entrance afterwards, as most effectual precautions had been adopted to prevent that. An unfavourable prognosis was now formed of the case, which the subsequent course of affairs only too truly verified. Symptoms of cerebral complication made their appearance immediately after, and on the 25th October slight convulsions occurred. The thumbs became flexed upon the palms of the hands, the pulse became more feeble and quicker, and occasionally very irregular, varying from 120 to 90 per minute. The temperature was not much changed, generally about 100°, but the vital powers were becoming sensibly weaker every day; squinting of the eyes occurred, and, so far as I could judge from the description of the parents—the case having been some miles away in the country—convulsions and coma preceded death, which took place on the 5th November, three months and fourteen days after birth.

I held a post-mortem fourteen hours after death, in which I was ably assisted by Dr Charles Douglas. The body was considerably emaciated and generally pale; features tranquil. On making an incision into the soft parts across the vertex of the skull no blood escaped, and on removing the skull-cap the dura mater was found adhering to the inner surface of the calvarium. The external surface of the dura mater was pale, and its bloodvessels very prominent; inner surface exhibiting networks of distended vessels. Superior longitudinal sinus rather empty in front, but loaded with dark fluid blood posteriorly. No change observable in the arachnoid. The surface of the pia mater was very much congested, and the vessels on the surface of the brain were also much distended, the hemispheres being symmetrical in shape. On removing the membranes two ounces of bloody serum were found in the cranium, and on slicing the brain substance from above downwards, it was found to contain here and there a few faint bloody points, but in other respects perfectly normal. There was one dram of serum in the left lateral ventricle; the choroid plexus was fringed and congested. Basis cranii entire. No communication existed between the brain cavity and the tumour, and no tubercles were detected in any part of the brain or its membranes. The circumference of the tumour now measured nine and a half inches from the chin to beyond the ear, and on opening it a pint of very fœtid pus was evacuated. The walls of the cavity were found of a yellowish-gray tubercular-looking, pyogenic membrane, and the external jugular vein, rough and thready-like, ran through it. All the other tissues were disorganized, and presented a cheesy appearance from the formation of cacoplastic deposits which were studded throughout the cavity, and covered with a coating of ill-conditioned pus and broken-down debris of fibrous tissue. No connexion could be traced between the cavity of the tumour and the thorax, nor could any diseased bone be detected in its vicinity.

As permission was only obtained to examine the head and neck, the rest of the body was not inspected.

In commenting on the above case it would be interesting to know the genesis of such tumours,—the period of fœtal life at which the sac formed and the fluid began to accumulate; but questions of this nature must be left to the speculative imagination of the embryologist. I find that among the numerous authors who have treated of tumours,[1] there is almost a consensus of opinion that cystic growths about the head and neck are generally of small size, and I have not met with any description of a case exactly similar to this one, though doubtless several may have been recorded. Lücke and C. O. Weber[2] affirm that it requires but a sound knowledge of pathological anatomy and clinical observation to arrive at a state of almost certainty in the diagnosis of tumours, and the former excludes the group of cystic growths from his classification of tumours, which latter he defines as "new formations." This is no doubt quite true, but something more is required. I do not see that in the case before us any amount of clinical acumen could have decided whether the fluid had any connexion with the membranes or not. Indeed, the natural inference to be drawn from its size, position, absence of transparency, the nature of its contents, and the period of life at which it occurred, was that it must have been something more than a simple cystic swelling beneath the surface of the skin, and nothing occurred throughout its course during life to warrant any other view being taken as to its pathological signification.

Now, as to treatment, the question immediately arises, What was the best line to adopt? Would it have been best to have let it alone? Against this latter proposition there were several objections—1st, on account of its unsightly appearance and the constant worry it created; 2d, the probability that sooner or later it would prove fatal, directly or indirectly; and 3d, the anxiety of the parents to have something done for it, the condition being looked upon as a great calamity and misfortune. The only point of doubt in the treatment was the possible entrance of bacteria during or after the second tapping, but the instruments being in an aseptic state, such a contingency was not anticipated. At the same time, too much caution cannot be exercised in surgical proceedings of this class;

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[1] One of the most lucid and concise descriptions of morbid growths in our own language will be found in Hughes Bennett's *Practice of Medicine*. Adam and Charles Black, Edinburgh.

[2] *German Clinical Lectures*. New Sydenham Society's second series. 1879.

and, indeed, this is the only objection to the antiseptic system of treatment, that it is so cumbersome and tedious, and in order to carry it out thoroughly an assistant is generally necessary, when one of a reliable nature is not to be found in out-of-the-way places. The system will have to be simplified to enforce its universal adoption, for it is certainly the best and most rational method of treating surgical cases which has as yet been discovered.

I am inclined to think that the case under consideration was of tubercular origin; and though no tubercles could be detected in the membranes or brain substance, or any undue vascularity at the base, there must have been a close sympathy between the two cavities, viz., that of the sac and the brain, and that, quite independent of other possible or probable causes, tubercular meningitis would sooner or later have claimed its victim.

ARTICLE V.—*On the Antiseptic Removal of Scrotal Elephantiasis.* By Surgeon-Major KENNETH M'LEOD, A.M., M.D., F.R.C.S.E., Professor of Surgery, Calcutta Medical College.

AT the close of an interesting paper on Elephantiasis Arabum by Dr E. Henderson of Shanghai, which was published in the January and March (1880) numbers of the *Edinburgh Medical Journal*, the author observes that "full antiseptic precautions cannot be easily carried out in such cases; but Dr Macleod (of Shanghai) has proved to me that even here they may be so employed as greatly to lessen the more immediate risks, and, indeed, materially modify the whole subsequent history of the case." The difficulties connected with the antiseptic treatment of these cases are—*1st*, The difficulty of thoroughly purifying the parts. The surface of the tumour is uneven, nodulated, or tuberculated, hairy, and studded with sebaceous follicles; excoriations, or even ulcers, sinuses, or fistulæ, often exist, and the preputial canal, in large tumours in which the penis is embedded, is full of organic impurities, and not easy to cleanse. *2d*, The urethra and anus are in close proximity to the wound, and they emit periodically material either already putrid or very prone to undergo putrefaction; they must, moreover, be kept open, and this interrupts the continuity of the dressings. *3d*, The wound is always an extensive and open one. In Calcutta we do not leave any skin that can be utilized as covering flaps, experience having proved that recurrence of the growth is apt to take place when this is done. *4th*, The wounded surface pours out a large quantity of discharge, lymph and blood, of a very putrescible character. *5th*, The wound necessarily takes a long time to heal, and the period of its liability to putrefaction is a very extended one. *6th*, The material by which repair is accomplished—granulation tissue—is of low organic status, and less competent to resist septic changes than tissues higher in the scale of organization; and *7th*, The part of the body involved is one on which it is not easy to retain dressings closely applied to the surface. These difficulties appeared to me to present insuperable obstacles to the successful adoption of the strict antiseptic system. Besides, the death-rate has latterly been moderate, and under a modified antiseptic treatment the great majority of these cases made a satisfactory and tolerably comfortable recovery. Still, in all cases a good deal of inflammatory disturbance, ending in suppuration, and accompanied by considerable constitutional derangement, took place; in all cases discharge was profuse, and, however careful and frequent the dressing, much fœtor, disagreeable to the patient and dangerous to the ward, occurred. In some cases sloughing set in locally; in others diffuse suppuration of a septic kind, accompanied by a low type of fever (septicæmia) crept up the cords or spread into the abdominal walls; occasionally diarrhœa or dysentery, evidently of septic origin, reduced the patient or put his life in danger; in a few cases erysipelas appeared, in a few others pyæmia was developed and carried him off, and not unfrequently visceral inflammation, bronchitis, pneumonia, pleurisy, or peritonitis, all, I suspect, of septic causation, proved dangerous or fatal. In all the operation of dressing was painful and offensive—painful on account of the inflammation, and offensive by reason of the putrefaction.

The possibility of obtaining better results under antiseptic management first presented itself to me in consequence of succeeding in keeping aseptic two cases in which I had operated for the purpose of setting free the penis. In both these the organ was bound to the scrotal cicatrix, which had resulted from removal of a scrotal tumour, by a dense and firm cicatricial band passing from the under surface of the glans to the anterior aspect of the scrotum. This was freely divided transversely, and the transverse wound was converted into a longitudinal one by stitching together the skin in the middle line. Antiseptic precautions were adopted, and physiological repair by means of lymph took place without intervention of inflammation, suppuration, putrefaction, or constitutional disturbance. Might not the same result be obtained in operations for the removal of scrotal tumours with the same benefit? I have now performed eight operations of this kind with strict antiseptic precautions, and I have gained sufficient experience to enable me to conclude—*1st*, that it is possible and easy, with a little care, to perform these operations and treat them to the end antiseptically; and, *2d*, that when this is done several material advantages result. I am so thoroughly impressed with the superiority of the results I have secured in this manner, that I hasten to give them publicity for the consideration of others who may incline to give strict antiseptic management a trial in these cases. The method by which these tumours are removed in Calcutta differs very little from that described by Dr Henderson in the paper already referred to. A detailed description of it will be found in Dr Fayrer's work on *Clinical Surgery in India* (page 312). The objects sought are: 1*st*, to empty of blood and keep empty the mass to be removed; 2*d*, to remove every particle of diseased tissue; 3*d*, to leave no tissue in which experience has taught us that disease is apt to reappear—for example, the preputial mucous membrane and apparently healthy skin at the sides of the tumour; and 4*th*, to preserve the penis and testes. The important object of emptying the tumour of blood and preventing hæmorrhage during the operation is well secured by the indiarubber bandage and cord. The belt devised by Professor Partridge, and described in the *Indian Medical Gazette* for January 1875, keeps the cord in excellent position and efficient until the principal vessels have been tied. Without this the cord is apt to slip off when the neck of the tumour has been divided. This adaptation of Esmarch's contrivance has undoubtedly robbed the operation of all its terrors, and I believe has very materially reduced its mortality. Professor Partridge removed in December last a scrotal tumour which weighed 111 lbs., and in January of this year I amputated a similar mass weighing 96 lbs., and in neither case did the bleeding amount to more than an ounce or two —less, I suspect, than had been driven out of the tumour by the elastic bandage. I find from the records of the hospital that, during the five years 1865–69, 133 scrotal tumours were removed, and that of these cases 31 died, or 23·3 per cent. In the five years 1875–79 there were 225 operations, with 32 deaths, or 14·2 per cent. This saving of seven lives in every hundred operations may, I think, fairly be attributed in chief measure to the improved means for restraining hæmorrhage, perhaps also in some degree to the use of antiseptic agents (carbolic and boracic acids) locally applied. I believe that under the strict antiseptic method a still greater saving of life and a very palpable saving of suffering and discomfort may be accomplished. The only change that I have introduced in operating—and it is one which the strict antiseptic plan has rendered possible—is the use of catgut stitches for the purpose of fastening the testes together and placing and retaining them in proper position. The stitches are passed, not through the testes themselves, but through the collar of tunica vaginalis which is left around them; for we are in the habit invariably of removing the tunica, whether healthy or diseased, in order to obviate the chance of hydrocele. I also dissect back the lateral flaps somewhat so as to construct pockets for the testes, and stitch the flaps so made to the sides of the testes. This materially hastens cicatrization and prevents inversion of the edges of the skin. Under the antiseptic system the catgut threads give rise to no irritation, and in about a week they are dissolved and absorbed by the living tissue, by softening infiltration with leucocytes and molecular dissolution, it is said. The ends fall out and come away with the discharges. The first step of the antiseptic operation is to purify the surface of the tumour and the adjacent skin thoroughly; this is done with a 1 in 20 carbolic lotion. The operation is conducted throughout under the carbolic spray, and dressings are applied with these objects—1*st*, To keep a non-irritating antiseptic constantly in contact with a raw or granulating surface. This is accomplished by means of boracic acid ointment (1 to 5) spread on thin muslin; it acts as a protective and local antiseptic. 2*d*, To arrange the dressings so that the discharges have a considerable distance to travel before they reach the unpurified air. This is done by placing them in contact with the skin for a distance of two or three inches beyond the margin of the wound. And, 3*d*, To surround the wound in every direction with an atmosphere of carbolic acid. Layers of carbolic gauze are placed over and beyond the wound, a layer of cotton wool adjusted over these, and the whole kept firmly in place by careful bandaging. The patient is provided with a vessel of carbolic lotion for use every time the bladder or bowels are moved. The dressings are changed daily for the first three or four weeks on account of the free discharge, first, of serum and blood, and then of lymph, and afterwards every second or third day, according to the amount of observed staining. I have now performed nine operations on this system. In the first three the excision was done without the spray, and the dressings applied under the spray after the wound had been thoroughly washed with carbolic lotion. One of these remained aseptic to the end, and the two others putrefied on the third day. This was perhaps due to the lateral flaps having been attached by catgut stitches to a tape passing round the thigh, which became soaked and foul. I have discarded this tape. The last six operations were performed under the spray, and the dressings also have been changed in a carbolized atmosphere. Four of these have remained aseptic throughout. In two the dressings emitted a suspicious odour for a day or two, but the use of iodine corrected this. In all there has been an entire absence of inflammation, suppuration, and constitutional disturbance, with the exception of slight reactive fever on the second or third day. The rule of previous cases was to manifest secondary fever in the second or third week. Repair has taken place more rapidly than under ordinary circumstances. Repair in these cases consists of four successive processes:—1*st*, *Effusion of lymph and blood.*—This surrounds and infiltrates the testes and cords. When the latter are diseased or voluminous, the mass of exudation is very large. Sometimes superficial sloughing of the infiltrated material takes place, as happened in two of these nine cases. Under antiseptic treatment this is strictly limited, and no tendency to spread is observed. The stitching of the testes reduces the amount of effusion very materially, and these organs are not floated off their bed by it, as under the old system. 2*d*, *Vascularization and organization of the effusion.*—Granulation tissue is formed, and this becomes permeated by blood-vessels and gradually undergoes a higher development. A thick coating of lymph, mixed with more or less blood, forms on the surface, and this is gradually removed, and a vascular surface is then displayed. These changes happen within the first ten days. Formerly inflammatory disturbance and profuse septic suppuration occurred during this period, giving rise to breaking down of the reparative material, to great constitutional disturbance, and frequently to diffuse cellulitis running up the cords and along the abdominal walls, extreme depression from septicæmia accompanying. 3*d*, *Granulation and absorption.*—The surface becomes quite clean and granular, the mass of neoplasm undergoes diminution of bulk, and the edge of the wound begins to cicatrize. 4*th, Cicatrization* now advances rapidly. Absorption still goes on. The skin is drawn from every side, advances over the granulating surface, and finally only a small cicatrix remains on the surface of the new scrotum, which, thick and stiff at first, in time becomes thin and pliable. All this process occupies time, and it is doubtful whether, in the absence of covering flaps, the period of repair can be reduced much below 2 months. Hitherto it has averaged about 2½ to 3 months. Skin-grafting accelerates cicatrization, and will probably succeed better under strict antiseptic precautions.

These cases have been, as a matter of experience, found to be specially prone to local and general septic infection. From the situation and size of the wound, the abundance of discharge, and the low type of the granulation tissue by which repair is accomplished, putrefaction and septic suppuration are inevitably set up unless special precautions are taken; and as the subjects of these growths are often old, feeble, and cachectic, it is impossible to say where the effects of septicity so set up may terminate. Under the old system a foul smell was exhaled and filled the ward on every occasion of dressing. The process was a painful and loathsome one, and if any erysipelas existed in the hospital these cases were sure to contract it. The advantage and comfort of the absence of all inflammation and putrefaction can therefore be understood, and the luxury of having only a little sweet flocculent lymph to remove off the surface and neighbourhood, instead of putrid pus. The liability of these cases to septic disease is well illustrated by the statistics I have already quoted. Of the 63 deaths which took place among these 358 cases, 11 were due to erysipelas, 5 to septicæmia and pyæmia, 18 to shock, asthenia, and exhaustion, 8 to tetanus, 3 to bowel complaints, 7 to inflammatory chest diseases, and the remaining 11 to various causes, some of them evidently septic.

Sir Joseph Fayrer, in his *Clinical and Pathological Operations*, gives (page 409) particulars of 193 scrotal tumour operations, of which 35 proved fatal, or 18·2 per cent. Of these 35, 11 died of pyæmia, 4 of shock, exhaustion, etc., 3 of pulmonary obstruction, 7 of tetanus, 4 of bowel complaints, 4 of gangrene, 1 of fatty degeneration of the heart, and 1 of peritonitis. If so many fatal results took place from septic poisoning, much suffering also resulted from the same cause short of death—from inflammation, erysipelas, diffuse cellulitis, fever, irritative typhoid and hectic, asthenia, tendency to collapse, etc.

To sum up, the advantages which appear to me to result from the strict antiseptic treatment of these cases are:—*1st*, By stitching the testes in place they are prevented, however long the cords, from being floated downwards or forwards by the profuse discharge. Less lymph suffices for repair, and the process of convalescence is thus materially shortened and final recovery accelerated. *2d*, The process of inflammation is entirely prevented. Repair takes place by physiological process, without intervention of any pathological phenomenon. *3d*, No constitutional disturbance takes place except the primary or reactive fever, which ensues within the first 48 hours, and this is very mild. *4th*, The risk of septic infection is entirely removed. *5th*, The process of dressing is painless, owing to absence of inflammation. *6th*, The patient is not a source of offence to himself or of danger to his fellows, putrefaction being entirely averted. *7th*, Cicatrization is materially accelerated. *8th*, The penis can be more easily kept free—a matter of considerable importance. *9th*, Much suffering and discomfort are avoided. *10th*, The risk of death is reduced.

I hope in a future communication to be able to confirm by statistical evidence the last proposition, and offer additional testimony in support of the others.

ARTICLE VI.—*The Axis-Traction Forceps.* By ARCHIBALD REITH, M.D., Aberdeen.

I WISH to offer a few remarks on the paper by Professor Simpson, entitled "On the Axis-Traction Forceps," which appeared in the September and October numbers of the *Edinburgh Medical Journal.*

As this paper has been extensively circulated through the country, I feel it needful to enter a caveat against a mode of procedure, which, notwithstanding the distinguished names connected with it, seems to me to be based on fallacious reasoning. It is proposed by Professor Simpson and others to supersede the old forceps, and to substitute what I consider a complicated and cumbrous instrument for the manual dexterity and simplified means so requisite in every operation, particularly of the obstetric kind.

It is undoubtedly essential that, in employing artificial means to expedite the passage of the head through the brim, traction should be made as nearly as possible in the line of the natural propelling force; but, with due deference, I submit, in the first place, that owing to the direction of the pelvic axis and the configuration of the pelvis itself, artificial traction can never do more than approximate the line of the natural force; and, in the second, that the ordinary double-curved forceps, when properly used, enables us to make that approximation as closely as the so-called axis-traction apparatus, and at the same time much more simply.

To remind accoucheurs of the axis of expulsion would be almost superfluous. The classical brim-axis extends in an antero-posterior direction from the umbilicus to the tip of the coccyx, and in not a few cases falls rather towards the upper than the lower end of that bone. There are instances also, where, owing to its partial obliquity and the slightly angular application of the expulsive power, the head is pushed at the outset in an axis passing through the presenting parietal bone and falling in the hollow of the sacrum. The whole of its course through the brim until it begins to make its forward movement is therefore antero-posterior.

This being so, it is manifest that any traction force, to coincide with the axial direction, must be exerted downwards and backwards in a line passing at least the tip of the coccyx, but not unfrequently higher up. Is it possible to accomplish this? I think not. Obviously enough, we cannot directly supplement the axial force at the very outset; and even when the head is in the full line of the pelvic axis the perineum and soft tissues intervening will more or less prevent the axial direction of the instrument. No matter what instrument we employ, this impossibility meets us. From the very configuration of the pelvis, all traction efforts must be regarded as deviating in a greater or less degree from the line of expulsion, irremediably so. There must therefore be unavoidable detrimental pressure on the pubes in all forceps cases, a pressure increasing or diminishing with the angle of deviation—in other words, in proportion as the head is high or low.

If it could be shown that Tarnier's forceps, or the modification of it as advised by Professor Simpson, diminished the angle of deviation more than the ordinary forceps, it would certainly be a great gain. But I fail to see, after mature consideration of the arguments adduced, that any such proof has been given. The recommendations advanced appear to me fallacious, and not in accordance with common mechanical laws, nor, indeed, strangely enough, with practical experience. Let us examine a few of the principal advantages claimed for the instrument which, though so called, is not entitled to the name of axis-traction forceps.

1. "There is no unnecessary and injurious pressure produced on the maternal structures." This statement overlooks the results of experience with the common forceps. The shanks and descending blades of this instrument often distend the vagina to its fullest extent, and as the head advances, carrying the handles forwards, there is considerable risk of injury. Unless great care be taken, sometimes, indeed, in spite of all care, injurious pressure will be

exerted on the structures beneath the pubic arch, as well as on the perineum. But here it is proposed to increase this distention by the addition of another appliance at least equal in size to the shanks, the introduction of which necessitates the carrying still further forward the forceps handles. It needs no great stretch of imagination to see that in these circumstances the advancing head will force the shanks and blades more to the front than when the forceps are used alone, thus entailing greater risk to the sub-pubic tissues. No doubt the vagina is very soft and ductile at the time of labour; but I speak of the many cases of small vaginæ, especially in primiparæ. We are not entitled, however, to add to the bulk of an instrument in any case without corresponding advantage, a qualification certainly not possessed by the forceps recommended. It may be said that we can reapply the forceps over the ears as soon as the head turns, but this only proves what I have said, that the axis-traction forceps is unnecessary and cumbersome. But further, when the head is engaged at the brim, it frequently happens that there is only one position in which the forceps can be applied so as to allow the blades to correspond with each other. In this condition the handles, in order to lock easily, are pressed closely against the perineum, sometimes pushing it backwards to a considerable extent. How are the traction-rods to be applied in such a situation? They cannot be attached in front of the handles, nor in a line with their axis; if they could, the whole argument in their favour falls to the ground. Neither can they be attached behind, for there is absolutely no room. Moreover, the handles are immovable; if force be exerted to bring them forward, the blades will be brought against the parts which are jammed together, causing serious mischief to mother and child. This is a very common difficulty, which the advocates of the instrument under discussion must face before they discard the old, well-tried forceps. Again, besides the risk of damage to the mother, the use of the axis-traction rods involves danger to the child. After the head is grasped by the blades closely enough to prevent slipping, the handles are turned forwards to admit of the introduction of the rods. This turn alters the position of the blades, gives them a sort of twist from their original adaptation. Hence, instead of lying equally on the plane of contact, if I may use such an expression, the blades will press unequally, and their edges will be more likely to penetrate the skin. This accident is all the more liable to occur from the mode in which traction is effected. Theoretically we are told it is exerted in the axial line of the blades and parallel to the handles; practically it is at a small angle, as may be seen at a glance. The result is a tendency to draw down the lower limbs of the blades, producing unequal pressure. If this is to be avoided, and uniform pressure obtained by the flat surfaces, the fixation-screw must be tightened more firmly, thereby exerting greater compression on the child's head than is at all necessary—

greater than that caused by the simple forceps when used as a tractor, as it ought generally to be.

2. "The head is made to advance under the pull of this artificial *vis a fronte* in the very same direction as it would move under the impulse of the natural *vis a tergo.*" This is a mere assumption. As I have already stated, it is obvious, from the configuration of the pelvis, that no external tractile force can act exactly in the axial direction. The nearest approach to it can be attained by the forceps alone as well as by additions to it.

3. "The head not being dragged by the forceps against the symphysis pubis, it is not so likely to elude their grasp." If no applied traction can imitate the axial direction, it follows that the axis-traction forceps will not prevent pressure on the symphysis any more than the common forceps; and further, the force exerted by them being at an angle to the blades, the latter are more apt to slip than when they are used without the rods, especially in occipito-posterior presentations.

4. "The direction of the application handles (*i.e.*, the ordinary forceps handles) furnishes a constant guide to the direction in which traction can be made with most effect." I do not quite understand the meaning of this remark, but from the context it would appear to be an admission that the handles of the forceps are a guide to the direction of the traction force. If so, and no one doubts it, what need of supplementary traction-rods? The forceps handles are a guide to themselves.

I regard the axis-traction forceps, therefore, as a mere substitute for the common instrument without the shadow of a claim to superiority—on the contrary, inferior in every way. As for the perineal handle of Hubert, a knowledge of mechanics ought to show that traction by it will not make the smallest deviation from the line taken by the uncomplicated forceps, and which, as I have said, is only an approach to the natural axial direction.

But Professor Simpson claims another advantage as possessed by his instrument over the forceps. According to him, it obviates the danger of compression by acting as a simple tractor. This would certainly be true if the forceps were necessarily a compressor; and, unfortunately, the mode in which it has been and is too often used gives some ground for the objection made against it. This, however, is the fault of the operator, not of the instrument. The handles are made the chief means of extraction, and more or less compression must take place. Sir James Simpson's instrument encourages this practice by having indentations to afford an easy grasp to the hand. But the forceps ought never to be used as a compressor unless in exceptional cases. Any other use than that of simple traction is bad when traction is enough. The shoulders afford ample purchase power in all cases where it is possible to deliver without compression; and if compression be required, it can be accomplished by approximating the handles with one hand while we extract with the other. The extent of compression can thus be more easily and more safely regulated than by the fixation-screw attached to the axis-traction instrument.

No doubt the axis-tractor will give the operator much more power at his command, and may possibly come to be of service occasionally. It is better to have too strong than too weak an instrument. But I question whether increased power be an advantage. I deprecate strongly the application of mere brute force in forceps cases as fraught with danger to the mother even when the child's safety is dispensed with. We may succeed in tearing a child through a contracted pelvis by mechanical force, but at what expense to the maternal structures! The safety of the mother is paramount; and I fear that the compromising course sometimes adopted of endangering the woman to avoid the horrible idea of mutilation ends, as middle courses generally do, in the loss of the mother as well as the child. If the legitimate power exerted by the forceps do not avail to bring the head through, we are fully justified in turning or perforating. Even the chance of turning may be lost by the employment of excessive force; for we may bring the head into the brim so jammed that it will neither advance nor recede, leaving us no alternative but to break it up. The axis-traction forceps seems to possess too much power, and, however well regulated it might be ordinarily, in difficult cases there would be a temptation to use it in such a way as to be detrimental to the mother as well as the child.

If the shanks of Sir James Simpson's forceps were lengthened, the instrument would obtain considerable addition of power, without complication, and would answer all the purposes required. My own pair is made after this pattern—double curves, long shanks, and long handles. It has succeeded often where Simpson's forceps failed, apparently from want of lever power. I think, therefore, that the objectionable features of the forceps—namely, weakness in traction and excess in compression—would be entirely removed by lengthening the shanks and by avoiding approximation of the handles during extraction.

With regard to the compressibility of the child's head, I am satisfied that it is somewhat exaggerated. A large proportion of heads are so far ossified that diminution of one diameter and increase of another by compression is almost impossible. Compression, in these cases, merely bruises the soft parts against the skull without altering the general shape of the head. Even when the bones are yielding, the forceps, particularly in the transverse application, seems only to flatten the movable parts rather than increase the opposite diameter. Besides, when applied at the brim, it does not always grasp the head in the prescribed oblique diameter. The blades are passed within the ilia by rule, but the parts embraced vary very much, and often the head is grasped in such a manner that the relative length of the diameters is unchanged.

I should notice that in occipito-posterior presentations, and in those where the occiput is bent towards the spine, the forceps is very apt to slip, and requires repeated application. The axis-traction forceps cannot be very serviceable here. It tends to slip more readily, and, moreover, its complicated nature renders it a very awkward instrument to introduce repeatedly. This constitutes another serious objection to its employment.

I am an advocate for the early and frequent use of the forceps, other things being equal. We are told that it is bad practice to interfere with nature; so it is, but we are dealing with unnatural conditions. The most common occasion for interference is uterine inertia, my experience of which is, that, once begun, it gets worse instead of better. Any time spent in waiting for pains ends in disappointment, and adds to the weakness and mental depression of the patient. We have to choose between speedy delivery and allowing the head to remain for hours in the pelvic cavity in the hope that the pains will revive. A very short experience of labour, and a single case of that frightful occurrence, flooding, will teach the practitioner which course is the safest to adopt. The early use of the forceps in these cases saves much of the woman's strength, and renders her far less liable to flooding. Indeed, it is a question whether, in multiparæ known to have had flooding in former labours, delivery should not be effected as soon as the os admits of it, and while the uterine powers are still in force. I think there need be little hesitation, and hope shortly to put the question to the test.

This is a digression, however. To return, The conclusions I have come to regarding the axis-traction forceps are these :—

1. It does not effect traction in the axial direction, nor does it approximate the pelvic axis more closely than the ordinary forceps.
2. Consequently it does not avoid or diminish detrimental pressure on the pubes.
3. It is more liable, especially in particular circumstances, to inflict injury both on the mother and on the child.
4. The axis of its traction being at a slight angle to the axis of the blades, the risk of injury to the child is correspondingly increased.
5. Compression by means of the fixation-screw is liable to excess, and cannot be regulated so easily nor so safely as by the handles and the tactus of the operator.
6. The increased power gained by it is liable to be used immoderately. The fullest legitimate power can be attained by the forceps, if the shanks be of proper length.
7. Any minor advantage it may possess, such as economizing the muscular power of the operator, is counterbalanced by its general defects.
8. It is therefore improperly named "the axis-traction forceps," and is not entitled to supersede the forceps in common use.

It is scarcely needful to say that the above remarks do not apply when the head is low down in the pelvic cavity. I presume no advantage is claimed for the axis-traction forceps in that situation.

ARTICLE VII.—*A Statistical Inquiry into the Action of the Bromides in Epilepsy.* By A. HUGHES BENNETT, M.D., Physician to the Hospital for Epilepsy and Paralysis, Regent's Park, and Assistant Physician to the Westminster Hospital.

BROMIDE of potassium is generally recognised as the most effective anti-epileptic remedy we at present possess. There exists, however, great difference of opinion as to its method of administration and to the amount of benefit which we may expect from its use. Some physicians who employ the drug after one method come to totally different conclusions as to its efficacy from those who use another. Many believe the remedy to be only useful in certain forms of the disease, and to be very uncertain and imperfect in its action. Others, again, maintain that it is positively injurious to the general health of the patient. These and other unsettled points the following inquiry attempts to make clear.

Epilepsy, like all other chronic diseases, presents great difficulties in scientifically estimating the exact value of any particular remedy; and unless the investigation of the subject is approached with the strictest impartiality, and observations made with rigid accuracy, we are liable to fall into the most misleading fallacies. I believe that these are to be avoided, and facts arrived at, however laborious it may be to the experimenter and wearisome to the student, only by the careful observation and elaborate record of an extensive series of cases. If, in epilepsy, the disease, from its prolonged duration, its doubtful causation and pathology, its serious complications, and the many other mysterious circumstances connected with it, offers almost unsurmountable difficulties to any definite and uniform method of treatment and the systematic estimation of the same, its symptoms furnish us with tolerably accurate data upon which to base our observations. The attacks, although only symptoms, may be practically considered as representing the disease, as in the large majority of cases, in proportion as these are frequent and severe, so much the more serious is the affection. The influence of the bromides on these paroxysms is taken in the following inquiry to represent the action of these drugs on the epileptic state.

Before proceeding to detail the facts arrived at, it is necessary briefly to state the method of procedure adopted in treatment. Each case in succession, and without selection, which was pronounced to be epilepsy, all doubtful cases being eliminated, was considered as a subject suitable for experiment. The general circumstances of the individual were studied; his diet, hygienic surroundings, habits, and so on, if faulty, were, when practicable, improved. The bromides were then ordered, and taken without intermission for periods which will subsequently be detailed. The minimum quantity for an adult, to begin with, was thirty grains three times a day, the first dose half an hour before rising in the morning, the second in the middle of the day on an empty stomach, and the third at bedtime. This was continued for a fortnight, and if with success was persevered with, according to circumstances, for a period varying from two to six months. If, on the other hand, the attacks were not materially diminished in frequency, the dose was immediately increased by ten grains at a time till the paroxysms were arrested. In this way as much as from sixty to eighty grains have been administered three times daily, and, with one or two isolated exceptions to be afterwards pointed out, I have met with no case of epilepsy which altogether resisted the influence of these large doses; and, moreover, I have never seen any really serious symptoms of poisoning or injury to the general health ensue in consequence. Sometimes these quantities of the drugs have been taken for many months with advantage; but as a rule it is preferable, when possible, after a few weeks gradually to diminish the dose and endeavour to secure that amount which, while it does not injuriously affect the general condition of the patient, serves to keep the epileptic attacks in subjection. The form of prescription to begin with in an adult has been as follows:—

℞. Pot. bromid., gr. xv.
Ammon. bromid., gr. xv.
Sp. ammon. aromat., ʒss.
Infus. Quassia, ad ℥j.
M. Ft. haust. ter die, sumendus.

According to the age of the patient so must the dose be regulated; at the same time, children bear the drug very well. The average quantity to begin with for a child of ten or twelve years has been twenty grains thrice daily.

In this manner I have personally treated about three hundred cases, and in all of these most careful records have been kept, not only of their past history, present condition, etc., but of their progress during observation. All these, however, are not available for the present inquiry. It is necessary in order to judge of the true effect of a drug in epilepsy that the patient should be under its influence continuously for a certain period of time. Now, a large number of patients, especially amongst the working classes, cannot or will not be induced to persevere in the prolonged treatment necessary in so chronic a disease. They either weary of the monotony of drinking physic, especially, as is often the case, they are relieved for the time, or other circumstances prevent their carrying out the regimen to its full extent. The minimum time I have fixed as a test for judging the influence of the bromides on epileptic seizures is six months, and the maximum in my own experience extends to four years. All other cases have been eliminated. I have arranged this experience in the form of tables for reference, in which will be seen at a glance—1*st*, the average number of attacks per month in each case prior to treatment; 2*d*, the average number of attacks per month after treatment; and 3*rd*, in the event of these being fewer than one seizure per month, the total number during the last six months of treatment.

TABLE I.—*Sixty Cases of Epilepsy, showing Results of Treatment by the Bromides during a Period of from Six Months to One Year.*

No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during six months of treatment.	No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during six months of treatment.
1	900	60	—	31	8	1	—
2	600	5	—	32	8	—	4
3	600	90	—	33	8	1	—
4	450	12	—	34	8	4	—
5	300	2	—	35	6	0	0
6	240	90	—	36	5	—	5
7	180	60	—	37	5	0	0
8	150	5	—	38	4	2	—
9	150	8	—	39	4	1	—
10	150	7	—	40	4	1	—
11	120	3	—	41	4	1	—
12	120	120	—	42	4	—	2
13	90	3	—	43	4	—	3
14	90	9	—	44	2	—	3
15	70	20	—	45	2	—	2
16	60	4	—	46	2	—	1
17	60	6	—	47	2	—	1
18	60	90	—	48	2	—	4
19	30	7	—	49	2	—	1
20	30	1	—	50	2	—	2
21	30	2	—	51	1	0	0
22	30	10	—	52	1	—	2
23	16	8	—	53	1	0	0
24	16	2	—	54	1	1	0
25	12	4	—	55	1	0	0
26	12	12	—	56	1	0	0
27	12	3	—	57	1	—	1
28	8	0	0	58	1	—	1
29	8	2	—	59	1	—	1
30	8	1	—	60	1	150	—

TABLE II.—*Thirty-two Cases of Epilepsy, showing Results of Treatment by the Bromides during a Period of from One to Two Years.*

No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.	No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.
1	900	60	—	17	8	0	0
2	600	120	—	18	8	—	3
3	300	30	—	19	8	—	4
4	180	60	—	20	8	—	1
5	150	—	2	21	8	—	10
6	150	1	—	22	6	—	1
7	90	9	—	23	4	—	4
8	90	15	—	24	4	—	4
9	60	2	—	25	4	2	—
10	6	—	1	26	2	—	1
11	30	—	4	27	2	—	2
12	30	4	—	28	2	—	2
13	30	2	—	29	1	—	0
14	30	3	—	30	1	0	0
15	16	—	8	31	1	0	3
16	12	3	—	32	1	—	3

TABLE III.—*Seventeen Cases of Epilepsy, showing Results of Treatment by the Bromides during a Period of from Two to Three Years.*

No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.	No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.
1	600	60	—	10	8	—	1
2	300	15	—	11	8	—	3
3	60	—	8	12	4	—	1
4	30	—	4	13	4	1	—
5	30	—	8	14	4	6	—
6	30	—	2	15	1	0	0
7	16	2	—	16	1	0	0
8	12	—	8	17	1	—	3
9	8	—	2				

TABLE IV.—*Eight Cases of Epilepsy, showing the Results of Treatment by the Bromides during a Period of from Three to Four Years.*

No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.	No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.
1	300	3	—	5	16	—	10
2	60	1	—	6	12	—	3
3	60	4	—	7	8	0	0
4	30	1	—	8	1	0	0

These four tables consist of all the characteristic cases of epilepsy which came under notice, without selection of any kind, all being included, no matter what their form or severity, their age, complication with organic disease, etc. In analyzing this miscellaneous series, the chief fact to be noticed, whether the period of treatment has been limited to six months or extended to four years, is the remarkable effect of treatment upon the number of the epileptic seizures. Of the total 117 cases, in 14, or about 12·1 per cent., the attacks were entirely arrested during the whole period of treatment. In 97, or about 83·3 per cent., the monthly number of seizures was diminished. In 3, or about 2·3 per cent., there was no change either for better or worse; and in 3, or about 2·3 per cent., the attacks were more frequent after treatment. With regard to the fourteen cases which were free from attacks during treatment, it cannot, of course, be maintained that all of these were cured in the strict sense of the term. It is probable that if many of them discontinued the medicine the seizures would return. Still, the results are such as to encourage a hope that if the bromides are persevered with, and the attacks arrested for a sufficiently long period, a permanent result might be anticipated. Even should no such ultimate object be realized, it is obvious that an agent which can, during its administration, completely cut short the distressing epileptic paroxysms, without injuriously affecting the mental or bodily health, is of immense importance. Take, for example, cases 7 and 8 of Table IV., where, prior to treatment, in the one case eight fits a month, and in the other one, were completely arrested during a period of nearly four years. The experience of physicians agrees in considering that the danger of epilepsy, both to mind and body, is in great part directly proportionate to the severity of its symptoms. If these latter can be completely arrested, even should we be compelled to continue the treatment, if this is without injury to the patient, it is as close an approach to cure as we can ever expect to arrive at by therapeutic means. The permanent nature of the improvement, and the possibility of subsequent discontinuance of the bromides without return of the disease, is a question I shall not enter into, as my own personal experience is not yet sufficiently extended to be able to form a practical opinion. A satisfactory solution of this problem could only be made after a life-long private practice or by the accumulated experience of many observers. With hospital patients it is almost impossible, as they are lost sight of, especially if they recover.

Of the total 117 cases which compose the tables, we find that in no less than 97 were the attacks beneficially influenced by the bromides. In the different cases this improvement varies in degree, but in most of them it is very considerable—for example, Nos. 2, 5, 8, 11, 20, in Table I.; Nos. 5, 6, 11, 15, in Table II.; Nos. 3, 4, 5, 6, in Table III.; and all the cases in Table IV. In these and others the attacks, if not actually arrested, were so enormously curtailed, both in number and severity, in comparison to what existed before treatment, as to constitute a most important change in the condition of the patient. In those cases in which improvement was not so well marked, in many it was most decided, and in frequent instances caused life, which had become a burden to the patient and his friends, to be bearable.

Of the total number of cases, in 3 the administration of the bromides had no effect whatever in diminishing the attacks, and in 3 others the number of seizures was greater after treatment than before. Whether in these last this circumstance was the result of the drug, or due to some co-incident augmentation of the disease itself, I cannot decide, but am inclined to believe in the last as the explanation.

After a consideration of these facts it is difficult to understand why most physicians look upon epilepsy as an *opprobrium medicinæ*, and that of all diseases it is one of the least amenable to treatment, and the despair of the therapeutist. For example, Nothnagel, one of the most recent and representative authorities on the subject, in speaking of the treatment of epilepsy, says, "Many remedies and methods of treatment have isolated successes to show, but nothing is to be depended on; nothing can, on a careful discrimination of cases, afford a sure prospect of recovery, or even improvement." Such a statement indicates either an imperfect method of treatment, or that in Germany epilepsy is more intractable than in this country, as a "careful discrimination" of the above cases affords a "sure prospect of improvement" and a reasonable one of recovery. That a critical spirit and healthy scepticism should exist regarding the vague and imperfect accounts of the efficacy of various drugs in disease is, I believe, necessary to arrive at the truth; at the same time, we must not refuse to credit evidence sufficiently based on observation and experiment. The above collection of cases are facts, carefully and laboriously recorded, and not originally intended for the purpose which they at present fulfil. Having been brought up in the belief that epilepsy was one of the most intractable of diseases, no one is more surprised than myself at the readiness with which it responds to treatment. So far, then, from this affection being the despair of the profession, I believe that of all chronic nervous diseases it is the one most amenable to treatment by drugs, resulting, if not in complete cure, in great amelioration of the symptoms which practically constitute the disease. It is right, however, to add that I can only speak from experience of cases under treatment for a period of four years.

(*To be continued.*)

ARTICLE VIII.—*The Systematic Use of Antiseptics in Midwifery Practice.* By J. HALLIDAY CROOM, M.B., F.R.C.P.E., Physician, Royal Maternity Hospital; Lecturer on Midwifery and Diseases of Women, School of Medicine, Edinburgh.

(*Read before the Edinburgh Obstetrical Society, 24th November* 1880.)

THE prevention of deaths during childbed is a subject which can never cease to be of interest to this Society so long as maternal deaths continue in their present ratio to be, as they are, the reproach of our art. Attempts more or less successful to prevent them by means of antiseptics are not new. Already the literature on antiseptics in midwifery, although not so bulky as in surgery, is yet by no means inconsiderable. Antiseptics and disinfectants have long been employed in obstetric practice; but of recent years, since the introduction of antiseptics by Mr Lister into surgical practice, much greater attention has been paid to their systematic use in our department. In Copenhagen, Germany, in Switzerland, especially Basel, in Paris, in London, antiseptic precautions have been employed to ward off what is the scourge of our lying-in hospitals.

It is at least twelve years since Bischoff, impressed with a visit he paid to Mr Lister in Glasgow, returned to Basel and set himself to carry out antiseptics in the lying-in hospital there with the most gratifying results.

Although, therefore, antiseptics are by no means new in midwifery, yet there seem to me to be reasons which justify my bringing the subject under your consideration—

1*st*, Because of the prevalence in our Maternity Hospital of maternal deaths, which it ought to be the first duty of every obstetrician to diminish, if not prevent.

2*d*, Because I have had a fair opportunity of carrying out antiseptics with care and accuracy for at least two terms of my service there.

3*d*, Because, so far as I know, the subject has not been ventilated here.

Now, concerning the question of maternal deaths, it must be admitted that the diminution of maternal mortality is the main object of our art. These maternal deaths, or deaths during childbed,—by which is meant deaths occurring within four weeks after delivery,—have been shown by Duncan, M'Clintock, Le Fort, and others, to be striking in their frequency; Duncan finding the proportion 1 in 120, M'Clintock 1 in 128.

In our own hospital I have gone over the books from its foundation up to the present time, and I find that out of a total of 10,043 women who have been delivered in it, 1·84 per cent., almost 2 per cent., or nearly 1 in 50, have died, so that the Edinburgh Maternity shows a death-rate sufficiently high to attract our attention and incite to the adoption of all means in any way calculated to diminish it. There is, perhaps, a sort of melancholy satisfaction to be derived from a consideration of the fact that we have not as yet reached a mortality to be compared with that attained by some of the German and French hospitals, where a mortality of 1 in 11 is by no means uncommon.

One cannot help feeling inclined to echo Miss Nightingale's remark, who, in commenting on Dr M'Clintock's observations concerning what he thought to be the normal death-rate of childbed, 1 in 128, observes: "One feels disposed to ask whether it can be true that in the hands of educated accoucheurs the inevitable fate of women undergoing, not a diseased, but an entirely natural condition at home, is that 1 out of 128 must die. If the facts are correct, one cannot help feeling that they present a very strong *prima facie* case for inquiry, with the view of devising a remedy for the present state of things." And if a mortality of 1 in 128 justifies such a remark, how much more a death-rate of 1 in 50.

Now, maternal deaths may conveniently be classified under three heads:—

1st, Non-puerperal deaths—deaths occurring from conditions altogether apart from the puerperal state—deaths which possibly the puerperal condition may have accelerated, but which are not necessarily connected with it, *i.e.*—deaths from phthisis, bronchitis, etc. With the occurrence or prevention of such deaths the present communication does not deal, but it may be interesting, in passing, just to note the relation which these deaths bear to puerperal deaths properly so called.

This has been well brought out in a table given by Munro in his excellent work on deaths during childbed. In this table he gives the deaths of women in England referred to childbed during the only fourteen years during which there is a record of non-puerperal deaths. He shows that out of 11,298,433 births of children born alive, 10,769 women have died from causes referable to this head,—in other words, that one-sixth of the women who die during the four weeks immediately subsequent to delivery succumb to diseases which are not the result of childbed. With the prevention of such deaths the physician *qua* accoucheur has but little to do.

The second class of deaths, termed the accidents of childbirth, are, of all the causes of death during childbed, those which are most dependent on the skill and adroitness of the accoucheur. Such deaths may arise from convulsions, rupture of uterus, hæmorrhage, and so on. With these deaths we have not at present to deal.

It is with the third class of deaths, deaths from metria or puerperal fever, that we are now concerned.

Again let us look at Munro's table, where we find that of 66,792 women dying during the first four weeks after childbed, 22,355, or 1 in 3, died from puerperal fever.

I have shown the general death-rate of the Edinburgh Lying-in Hospital, but I am unable to say with any accuracy what the relative death-rate is, arranged under the three headings to which I have just referred. The reason of this is simply owing to a want of definiteness in the manner in which the records have been kept.

If the general death-rate is high,—and I fear there is no denying the fact,—much may be said by way of explaining and accounting for it by a reference to the various unsuitable and unsanitary localities in which it has from time to time been situate in its long though chequered existence. It is sufficient for my present purpose to analyze the death-rate since the opening of the New Royal Maternity and Simpson Memorial Hospital. Thanks to the admirable suggestion of Dr Keiller, accurate reports by the ordinary acting physicians have been published quarterly, and the death-rate, as well as the cause, can be ascertained with exactitude.

The new hospital was opened in May 1879, and from that date till the end of October 1880, 320 women have been delivered in the building; and of these 320 women 12 have died, making the mortality 1 in 26·6—3·89 per cent.—a sufficiently startling fact. In the new hospital no similar explanation of the high death-rate is to be found. Here we have a completely new building, with all the most modern sanitary improvements, examined by the most competent sanitary authorities, and conducted with all due care and caution, with a death-rate accompanying a normal process I think I may say higher than now after the capital operation of ovariotomy in the hands of Dr Keith.

Let us analyze this mortality under the three heads to which I have alluded, viz., non-puerperal, accidental, and metria; and what do we find? From non-puerperal causes only one woman died, and she succumbed to an affection of the kidney. Under the second head it may be said that a maternity charity should, *prima facie*, be expected to have a higher death-rate than extern practice, because to it are sent many serious operative cases. I do not think this is the case to the extent that might be supposed. Speaking of my own experience of our own hospital, the great majority ofcases are not sent, but come voluntarily, not because of any peculiarity in their case, but simply for shelter till the confinement is over. No doubt serious operative cases are occasionally sent to hospital, but not in anything like the proportion that might be expected. From this second set of causes there died but one patient, owing to an ovarian tumour complicating pregnancy.

We come now to the third class—deaths from metria or puerperal fever. Since the opening of the hospital, of the 12 deaths which have been recorded, 10 have taken place from this cause. Nor have these deaths been confined to the service of any one physician. With the exception of Professor Simpson, each of us has contributed his quota of deaths from metria. The occurrence of puerperal deaths to the extent I have just shown, occurring in a new hospital, is sufficiently striking to require our earnest attention. In a report which I read to this Society, giving an account of my first quarter at this hospital, I fully recorded three deaths from puerperal fever, and advanced what I believed to have been the origin of the disease, viz., the want of a separate mortuary, and the performance of post-mortem examinations in the hospital. Since that report this fault has been remedied, and the hospital thoroughly and repeatedly disinfected. Notwithstanding all this, the deaths from puerperal fever have continued. Yet during that period there has not been recorded a single case of death from a similar cause in the extern practice of the charity, although the births are double, amounting to 625, and the general death-rate only 1 in 156.

This brings us back to the old question long ago worked out by Sir J. Simpson, Evory Kennedy, and others, of home *versus* hospital practice, and of the greatly increased mortality of hospital as compared with home. The present communication obviously does not embrace any reference to the necessity of maternity hospitals, nor to the best methods of their construction. Those who wish a *résumé* of the whole subject will find such in Dr Munro's excellent book. To me it seems sufficiently established that maternity hospitals must exist, as much for the benefit of women at a time when they most need shelter and assistance, as for the clinical instruction which the medical student can receive there, and there only.

Another point seems equally clear to me, viz., that we must make the best possible use of the hospital we at present possess. For as it has already taken about half a century to impress upon the people of Edinburgh the need of a proper building to be used as a lying-in house, there does not seem any immediate prospect of another being built, even if any flaw could be pointed out as existing in the present one.

The present Maternity Hospital being a necessity, and puerperal fever having been shown to exist there, and to have been the direct cause of death in 1 out of every 32 women, and as all needful sanitary improvements have been made, it becomes necessary to look for the prevention of this scourge by means apart from the building itself.

I speak of prevention rather than cure, because I take it that it must be the experience of most if not all of us who have had to deal with a pronounced case of puerperal fever, that in its presence we are nearly powerless, or at least we are not in a position to rely with certainty on the efficacy of any of the means employed. The recent paper of Dr Matthews Duncan on the treatment gives an account of the various means that have been employed, and it would appear that the pharmacopœia has been ransacked, and drugs of all kinds have been had recourse to, but with very uncertain effect. At most, we are fortunate if we alleviate pain by narcotics, or prolong life for but a brief period by a free administration of alcohol. If, therefore, we are comparatively unable to cope with puerperal fever once it is fairly established, it becomes our duty to be all the more anxious to adopt any precautions which may offer a reasonable hope of preventing it.

What, then, is the nature of this disease which has proved fatal in our new hospital to one out of every 32 women who have been delivered there? and is it feasible to suppose that it can be prevented? Now, I do not believe that we can ever hope to prevent puerperal fever entirely, because its origin is possible in so many ways, and the factors in its production are often beyond our control; but I feel certain that by a strict attention to antiseptics we shall be able to reduce its occurrence to a minimum, and render its presence in hospital practice, where I have just said it is most common, a rarity. By an almost general consensus of opinion, puerperal fever is regarded as a wound disease resulting from a poison introduced into the wound. Of wounds in the puerperal condition there is no lack, and that after the most normal labours.

Be the labour ever so natural, several wounds are never wanting —1*st*, A tear at the posterior commissure, and frequently, though they are often unobserved, tears in front, in the neighbourhood of the urethra and clitoris. 2*d*, There is seldom wanting a tear in the cervix, more or less deep; and lastly, a wound at the placental site there always is. If there be any want of harmony in the three factors of labour, the wounds at the perinæum and cervix become more extensive, and there is superadded, possibly, the crushing and bruising of the parts from a prolongation of the labour as well as the application of instruments. Now, these wounds, as long as they remain open wounds, and until they become granulating sores, are liable to infection. Besides, these wounds are specially liable to absorb and rapidly spread noxious material through the system; for we must recollect the extreme vascularity of the genital organs and the parts in the neighbourhood, the expansion of the venous and lymph channels, as well as the diminished vitality of the parts close to the wounds.

Now, I have referred to these wounds probably in the order in which the infection takes place; because, no doubt, the external wounds are the most likely and most frequent conductors of infection. Next in order comes the cervical tear, and, least frequently, the placental site. Contained as it is deeply in the uterine cavity, it is cut off from external influences by the contractions of the uterus. Now, we can only to a very limited extent indeed prevent these wounds. Of the conditions favouring the development and spread of infection in puerperal women by the vascularity of canals, the presence of open wounds, and the greater or lesser destruction of the vitality of the parts surrounding, we can only to a very limited extent indeed modify the two latter; *i.e.*, by a timely use of the forceps we may possibly prevent a deep tear, and certainly will prevent continued contusion, and, consequently, impaired vitality. So much for the condition of the parts favouring the absorption of septic material. Whence comes the infection? For sources of infection we have not far to look. These may either be from without or from within —autogenetic or heterogenetic. Of the former we can readily observe several sources. Even the normal lochia have been shown to be of importance, containing, as they do, copious debris; and if the normal lochia are to be considered possible sources of infection, what shall be said about this discharge when it has become fœtid? Decomposing blood-clot, as well as pieces of retained placenta and membrane, are by no means uncommon accidents during the puerperium. Then, again, the liquor amnii may become septic from contamination with external air in cases of early rupture of the membranes. The discharge from any of these sources, passing over the wounds to which I have referred, before they have become coated with granulations, may at once become a source of infection. To the heterogenetic there is scarcely a limit. First, there are the fingers of the accoucheur and the nurse, as well as unclean instruments and appliances. In our own Maternity, where both the University and extra-mural students are taught, there is the additional risk from students who, in spite of instructions to the contrary, may have come from post-mortem or dissecting-rooms, and from attending infectious cases. Further, there is possibility of infection from insufficiently cleansed linen, as was shown to be the case in a recent report of an outbreak of puerperal fever in the Queen Charlotte Lying-in Hospital in London. The medical report of this hospital for the past year shows that in the spring of the year 1879 sixteen deaths occurred from diseases comprised under the name puerperal fever — a fatality which very properly led to the temporary closing of the hospital and a careful inquiry into the cause of the mortality. The result of the inquiry was, as I have just shown, the discovery that the *fons et origo mali*, lay in imperfectly cleansed linen. This hospital was closed accordingly, and since its reopening the death-rate has fallen to 1 in 350. It need scarcely be pointed out that the presence of any decaying animal matter is sufficient cause of infection, as well as the proximity of fever or erysipelas. But, apart from these, the mere aggregation of lying-in women is of itself a cause of danger.

Such is the disease, and such the channels and source of infection. The channels of infection must remain. They are in great measure a part, and a non-preventable part, of the normal process of delivery. The sources of infection, no doubt, are to a much greater extent under our control. By strict attention to cleanliness an immense amount by way of prevention may be accomplished; but in our hospital every attempt has been made. The hospital has been cleaned and disinfected again and again; one set of wards have been changed for another; and yet the mortality has gone on. Unlike some maternities, our hospital is not attached to any general hospital, so that one fertile source of infection is removed. The remedy, then, as Bischoff showed twelve years ago, consists in preventing the septic germs or bacteria from entering the wounds; and as carbolic acid is destructive to the vitality of these germs, the obvious indication is the employment of this or some other antiseptic systematically in the treatment of all cases of labour.

Now, although I would strongly advocate the employment of antiseptic precautions regularly in private practice, yet it is more particularly to the Maternity Hospital that the following simple antiseptic rules apply.

It is impossible, we must admit, to carry out antiseptics completely and thoroughly in obstetrics, at least, except by the adoption of elaborate contrivances, which I fear would be impracticable. But although absolute asepticism is not attainable, yet by a strict adherence to the rules we shall, by modifying the poison, either render it inert or else greatly diminish the severity of the infection.

Rules to be observed by Students.

1. No student shall be allowed to visit the hospital who is engaged in the dissecting-rooms, or in attending post-mortem examinations or infectious cases, either in hospital or dispensary practice.
2. No student shall examine any patient in the hospital, in any way whatever, except in the presence of the ordinary physician or the resident medical officers.
3. Before each per vaginam examination the student shall thoroughly wash his hands in carbolic wash (1 in 30).
4. In all vaginal or uterine examinations 1 in 20 carbolic oil shall be used for lubricating the fingers.
5. Each student, on entering the hospital daily, shall sign the album.

Rules to be strictly observed by Nurses.

1. *Washing Hands.*—No nurse shall touch, or make any application whatever, to the genital organs of a patient, without having first thoroughly rinsed the hands in carbolic wash (1 in 30).
2. A large bottle, containing a solution of 1 in 30 carbolic acid,

and a small bottle of carbolic oil (1 in 20) shall permanently stand on the table in every ward and delivery-room.

3. *Diapers.*—Each diaper, on removal from a patient, shall at once be taken out of the ward or delivery-room downstairs to the wash-house, and then placed in a tub containing carbolic wash.

4. Each diaper shall be washed, boiled, and dried by the laundress.

5. Immediately before application to the patient's genitals, the nurse in charge of the case shall soak the diaper in 1 in 20 carbolic wash, and afterwards dry it, or apply it wet, according to instructions.

6. *Catheters, Vaginal Tubes.*—All catheters and vaginal tubes shall be kept, when not in use, in carbolic oil (1 in 60).

7. *Before* using a catheter, the nurse shall dip her fingers and catheter in carbolic oil (1 in 20).

8. *After* use she shall wash the catheter in carbolic lotion (1 in 20), and then replace it in carbolic oil (1 in 60).

9. *Syringes, Sponges.*—All syringes and sponges, when not in use, shall be kept in carbolic wash (1 in 30).

10. Before using a syringe, the nurse shall lubricate her fingers and the vaginal tube of the syringe with carbolic oil (1 in 20), and see that air is carefully expelled.

11. *Washing and Syringing.*—All washings and syringings, when such are required, shall be done with a solution of carbolic acid (1 in 60).

12. All the Mackintosh sheets shall be thoroughly washed in carbolic wash.

13. *Dirty Sheets.*—All dirty sheets shall be promptly removed from the ward or delivery-room to be cleansed.

14. *Deaths.*—On the death of any patient, the body shall at once be removed to the mortuary outside the hospital.

15. *Visitors.*—No visitor whatever shall be allowed admittance to the hospital unless provided with a special pass from the resident medical officer on duty.

In respect of these rules there are one or two points which require special notice:—

1st, In regard to the application of diapers. In the hospital it has been the custom to use the same diapers over and over again, which in itself I hold to be a source of danger; but further, if the nurses are allowed to apply the diapers dry there is no sufficient guarantee of when they have been dipped and dried. As the first twenty-four hours are the most dangerous period, the wounds being raw and the vagina more or less patent, I have adopted the precaution of having the diapers applied when still wet with carbolic wash during that period. This precaution I hold to be of great importance. Perhaps diapers dipped in boracic acid and allowed to dry might do equally well, if not better. They would be applied with crystals still adhering to them, and would probably be more comfortable for the patient.

2d, All operative procedure, such as application of forceps and the introduction of entire hand into vagina or uterus, I have conducted under the carbolic spray, with the instrument and arm well lubricated with carbolic oil. The latter is absolutely essential under all circumstances. The former,—viz., the use of the spray—is, I think, needful only in hospital, where the infection is greater than in home practice, and also because in hospital, at least in teaching hospitals, the measure, to be properly demonstrated, requires longer time and more exposure of the parts. At the same time, if I had to deliver a woman in private with scarlet fever or erysipelas in the house, I should certainly use the spray.

3d, The carbolic oil is to be preferred to carbolic acid wash to keep the instruments when not in use. I fear I have destroyed several catheters and vaginal tubes with the carbolic wash. A weak carbolic oil does not in any way injure gum-elastic instruments.

4th, I have adopted, and found it valuable, to insist on the students, at every morning visit, signing an album acknowledging that they have conformed to the rules I have laid down for them.

5th, In any case where the labour is prolonged, it is desirable to wash out the vagina occasionally with a weak solution of carbolic lotion previous to delivery.

These rules, involving as they do considerable trouble on the part of the nurses, are apt to be perfunctorily carried out. A great deal of the success of the treatment, therefore, depends on the energy and strictness of the resident surgeons. It must be their duty, at each daily visit, to inquire carefully whether and how the antiseptic precautions have been carried out in the case of each individual patient. Satisfactory results cannot be expected unless the precautions are scrupulously observed in every case.

In bringing this paper to a conclusion, the question naturally arises, Am I able to show that the adoption of these antiseptic precautions has been accompanied by any good results in my own experience during the two terms I have had the privilege of conducting in the present hospital? Early in my first quarter three maternal deaths from septicæmia rapidly succeeded one another, originating in the manner I have already described. During the same period high temperatures and frequent attacks of pelvic peritonitis were common.

After the third death the antiseptic precautions just described were adopted, with the result that the temperature became normal, the peritonitis disappeared, and no further case of septicæmia occurred. On assuming duty this quarter I found a septic case in hospital, which died from septicæmia, and shortly after a second patient succumbed to the same disease. Thereafter antiseptic precautions were energetically carried out, and no further case occurred, and the temperature, with one or two exceptions, to which I have alluded in my report, became and continued normal; for I hold that the frequent pelvic disturbance and high temperature which showed themselves in the early days both of my present and former quarters were owing to septic influences, these becoming definitely and fatally developed when specially predisposed persons were attacked. But it may be said that the satisfactory result in my first quarter was owing to the closure of the hospital, and its thorough disinfection, and at that time such certainly was my impression, as shown in my previous report; but this year, after the second death from septicæmia, no such closure took place, and the deliveries went on uninterruptedly, the only change being the careful adoption of the antiseptic rules, and yet no indications of septicæmia manifested themselves. It must be kept in recollection that we labour in the Maternity under two great disadvantages—

1*st*, We have not, as in other hospitals, a permanent trained staff of nurses, but each acting physician has to begin and conduct his quarter with a new and often most incompetent set of women, who, without any previous instruction, come to be trained as nurses. It is often with difficulty we can impress on them the most ordinary rules of cleanliness, apart altogether from the carrying out of minute antiseptic details. It is therefore with satisfaction we must regard the proposed appointment of a permanent trained nurse, to whom the superintendence of such minutiæ can be left.

2*d*, It must be borne in mind that the majority of the intern cases are single women who have been seduced, and who, apart from their mental condition, which is of great importance, have, previous to admission, been in straitened circumstances and badly nourished, and are consequently specially liable to be quickly and gravely affected by any septic influence under which they may be brought.

From these and such like causes I fear it is utopian to hope that we shall ever be able to prevent puerperal septicæmia entirely. I feel convinced, however, that by a strict observance of these or some such antiseptic rules we shall very materially diminish its frequency, certainly prevent anything like an epidemic, and render its presence a rarity in our hospital, where hitherto it has been a scourge.

ARTICLE IX.—*Clinical Lectures on Intra-Cranial Tumours.* By BYROM BRAMWELL, M.D., F.R.C.P.E., Lecturer on the Principles and Practice of Medicine and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh; late Physician and Pathologist to the Newcastle-on-Tyne Infirmary; formerly Lecturer on Clinical Medicine and on Pathology in the University of Durham College of Medicine, Newcastle-on-Tyne, etc., etc.

LECTURE I.

GENTLEMEN,—The specimen which I show you is a beautiful example of an intra-cranial tumour. It was removed from the body of a little boy, æt. 5 years, who was admitted to this Infirmary[1] under my care on 27th February of the present year, and who died on the 21st of August. I propose to-day, contrary to my usual custom, which is, as you know, to speak of the living patient, to take this case as my text, and to consider intra-cranial tumours from a clinical point of view.

The subject is in many respects difficult and obscure. In order that I may make it as easy and understandable as possible, I shall draw a rough rather than a finished picture, and shall avoid as far as possible points of controversy.

I shall first briefly relate to you the case of the little boy whose brain is on the table; and I have the less hesitation in thus introducing the subject, as most of you are already familiar with the case. You will remember that, while the patient was under observation, we had frequent discussions at his bedside.

CASE I.—J. W., æt. 5, was admitted to the Newcastle-on-Tyne Infirmary under my care on 27th February 1877. His parents, who brought him to the hospital, stated that his present illness commenced gradually, three months previously, with headache and vomiting. The vomiting was slight, and only occurred once or twice. The headache was generally frontal, and was worse at night; for some weeks before admission it had been so severe that he had cried the greater part of the night. There had been no fever. He had never had a fit. His parents knew no cause for his illness. Two years before admission he had fallen down-stairs, and had injured his head. Eighteen months before admission he had had a severe attack of scarlet fever, but had recovered perfectly. The other members of the family were healthy.

The patient was a sharp, intelligent boy, active in all his movements, and well nourished. His face was somewhat pale, and puffy about the eyelids, but the urine was free from albumen. (It contained some excess of phosphates.) The pupils were equal and dilated. *Sight* was good, but on examining the fundus oculi with the ophthalmoscope marked optic neuritis was seen in both eyes. The *appetite* was voracious. The *pulse* and *temperature* were normal.

The left wrist-joint was swollen, and evidently in a state of scrofulous degeneration. There was, however, no pain, not even tenderness on pressure. The other systems and organs seemed normal. There were no signs of congenital syphilis.

Diagnosing the case as one of intra-cranial tumour, I ordered a mixture containing iodide and bromide of potassium.

After a few days of this treatment the headache disappeared. The patiently slept soundly and quietly all night, played about all day, and seemed quite well. Indeed, on more than one occasion the nurse asked me to discharge him from the hospital. I would not let him go, for I was certain, from the condition of the optic discs, that the case was much more serious than to casual observation it appeared to be—an opinion which was abundantly confirmed by the subsequent course of events.

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[1] These lectures, which were originally delivered to the students of the University of Durham College of Medicine at Newcastle-on-Tyne, have recently been revised and added to.

On 20*th March* an internal squint of the right eye appeared. The iodide was increased from 5 to 10 grains.

On 26*th March* it was noted: For some days past he has been very dull and heavy, and has slept a great deal. An antiseptic incision was to-day made into the left wrist-joint, and a quantity of thick, cheesy pus evacuated.

On 5*th April* he had a series of severe epileptiform convulsions. Both sides of the body were affected. He was insensible for three hours. Next day, 6*th April*, he looked pale and stupid, but was able to walk about and to eat as usual. The squint was less marked, and on 20*th April* it had disappeared.

For the next two months he remained *in statu quo*, making no complaint, eating voraciously, and sleeping too constantly. He gradually became more and more stupid, his eyesight began to fail, and ophthalmoscopic examination showed that optic atrophy was commencing. All this time the general condition as regards nutrition continued to be good, and there was never, until the final catastrophe, any trace of paralysis.

On 17*th August* he vomited several times, and was again seized with convulsions. The attack lasted several hours. When it passed off, the left arm and left leg were found to be paralyzed. The patient remained in a semi-comatose condition until 21*st August*, when he died.

Such was the life history of the case. The chief post-mortem appearances were as follows:—The scalp and skull-cap and membranes were natural. The convolutions were greatly flattened, the sulci effaced. On cutting into the brain tissue several nodules of new growth were found. The largest, which was fully the size of a pigeon's egg, had completely replaced the anterior part (the head) of the left corpus striatum. Another nodule, about the size of a cherry, was found in the anterior part of the corpus callosum; a third, somewhat smaller, occupied the tip of the left occipital lobe; a fourth and fifth were found in the upper and middle right temporal convolutions. All the nodules were of a greenish-yellow colour, firm in texture, looking to the naked eye as if they contained a good deal of fibrous tissue. Their borders were well defined, but not encapsuled. None of them were softened in their interior. On microscopical examination they presented the usual appearances of scrofulous intra-cranial growths.

This, then, is in many respects a typical case. I will now proceed to consider *seriatim* the *symptomatology, diagnosis, prognosis,* and *treatment* of intra-cranial tumours, illustrating my remarks by reference to this and other cases which have come under my own personal observation. Some of them are, as you are aware, at present in the wards. Let me first, however, tell you that under the term intra-cranial tumour I include any enlargement or new growth which encroaches upon the intra-cranial cavity, or which is situated in the substance of the brain tissue.

Symptomatology.—It not unfrequently happens that an intra-cranial tumour is found post-mortem, whose presence had never been suspected during life. A notable instance of this occurred in the case of my old master, that distinguished clinical teacher and physiologist the late Professor John Hughes Bennett (Case II.) He died, as you perhaps may know, after the operation of lithotomy. At the post-mortem a tumour the size of a hen's egg was found about an inch above the right ear. It was situated between the dura mater and the bone, and projected towards the brain so as to produce a deep pit or hollow, into which it (the tumour) fitted. The parietal bone over the tumour was thinned by pressure and absorption. At one point, about the size of a shilling, all trace of bone had disappeared, the osseous tissue being replaced by fibrous membrane. Around the circumference of the tumour the bone was thickened and hypertrophied. The dura mater over the tumour was thickened. The convolutions were flattened and pressed down, but not otherwise altered. There was no congestion, no softening.[1]

Now, had this tumour produced any characteristic symptoms, its presence must have been suspected during life by Professor Bennett, who was one of the greatest clinicians of his day, and by some of the many eminent physicians whom he consulted.

We must conclude, then, that intra-cranial tumours are not necessarily attended by *characteristic symptoms.* I say characteristic symptoms, for I agree with Obermier in thinking that every tumour (I would say every *growing* tumour) of any size which presses upon or injures the brain must give rise to symptoms either transitory or otherwise.[2]

In speaking of the absence of symptoms in some cases of intra-cranial tumours, Dr Hughlings Jackson says :—" Yet, when there is no striking defect, there may be dulling of mind (slowness, hebetude, incapacity for *continued* mental exertion); still there are no symptoms which make the patient seek a doctor until perhaps shortly before death. The patient's mind may be so generally reduced to a lower level that neither he nor his friends notice any failure; or they may notice 'alterations' of disposition, which they put down to wrong causes—to the influence of external circumstances. There is doubtless from every degree of lesion of the cerebral hemisphere loss of some special or "delicate" intellectual process, and correspondingly of some of the finer emotions; for every intellectual act is accompanied by emotion.

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[1] *British Medical Journal*, 9th October 1875, page 453.

[2] Ziemssen's *Cyclopædia of Medicine*, vol. xii. p. 241.

To adopt an expression from ophthalmology, there is no doubt 'a limitation of the mental field,' a limitation of the area of consciousness."[1]

Absence of characteristic symptoms is chiefly observed in those cases in which the tumour is stationary or of extremely slow growth; in which there is no increased intra-cranial tension; and in which the nervous tissue is not irritated by the pressure of the lesion. *Vice versâ*, marked symptoms are always seen in those cases in which the tumour is of rapid growth; in which there is greatly increased intra-cranial tension; and in which the brain tissue is irritated by the lesion.

In the case of Professor Bennett, to which I have referred, the tumour was evidently of very slow growth, probably stationary. His son, my friend Dr A. Hughes Bennett, of the Westminster Hospital, informs me that it was probably congenital, for the Professor had frequently directed his attention to a depression in the skull over the position of the tumour, and had stated that it had existed as long as he could remember—since childhood.

The chief symptoms met with in cases of intra-cranial tumour are:—

1 Certain changes in the optic discs (optic neuritis and optic atrophy).

2. Headache.

3. Vomiting.

4. Giddiness.

5. Alterations in the motor nerve supply of muscles (spasms and paralysis).

6. Alterations in the sensory nerve supply to the face, limbs, or trunk.

7. Psychical disturbances or alterations in the mental state.

8. Phosphaturea, a symptom common to this and many other nervous affections.

9. A voracious appetite. According to Drs Lawson and Bevan Lewis, this symptom often occurs early in the course of the disease, *i.e.*, before hebetude or decided alteration in the mental condition have appeared.

Let us now consider some of these symptoms in detail.

CHANGES IN THE OPTIC DISCS.

The most frequent appearances seen on ophthalmoscopic examination are the conditions known as ischæmia papillæ (the choked disc), and optic neuritis (papillitis of Gowers). It is still a moot point whether these two conditions are distinct and separate, or whether they are not different stages of one and the same process. Many of our best observers—as, for example, Dr Hughlings Jackson and Dr Gowers—are unable to draw any sharp line of distinction between them. I will therefore speak of the two conditions under the one term, optic neuritis.

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[1] "Lectures on the Diagnosis of Tumours of the Brain," *Med. Times and Gazette*, 23d August 1873.

Optic neuritis is met with in the great majority of cases of intra-cranial tumour, *and is the most important of all the symptoms.* The appearances of the fundus in this condition are well represented in the water-colour drawing which I show you. The disc, you will observe, is much swollen; its edges blurred, and in places effaced; its colour in some parts reddish-gray, in others deep red, and it has a mossy, striated appearance, which is very characteristic. The veins in this case are large and tortuous, the arteries small, and in places invisible.

In the immense majority of cases the optic neuritis is double. This rule is not, however, absolute, for Dr Hughlings Jackson, the greatest living authority on intra-cranial tumours, to whose opinions I shall have frequently to refer, and to whose writings I am indebted for a great part of my knowledge of this most interesting subject, has reported two cases[1] in which the optic neuritis was unilateral, and it is interesting to observe that in those cases it occurred on the opposite side to the lesion.

A great deal of discussion has taken place as to the manner in which the optic neuritis of intra-cranial tumours is produced. The question is still unsettled. Three theories, none of which is absolutely satisfactory, are put forward in support of different views. They are as follows:—

1. *That it is the effect of increased intra-cranial tension.*[2] This—the mechanical theory—was first advanced by the celebrated German oculist, Von Graefe. He supposed that the increased intra-cranial tension obstructed the return of blood from the eye by compression of the cavernous sinus, and that this effect was still further intensified by the unyielding sclerotic ring acting as a multiplier.

Von Graefe's explanation of the manner in which increased intra-cranial tension produces optic neuritis was abandoned in favour of the explanation of Schmidt and Manz, when it was found that "the communication between the superior orbital and facial veins was so free that the effect of pressure on the cavernous sinus was at once relieved, and did not cause more than a transitory fulness of the retinal veins, and that even obliteration of the cavernous sinus caused no intra-ocular changes."[3]

According to Manz, increased intra-cranial tension produces distention of the subvaginal space, and consequent pressure upon the optic nerve and its vessels just behind the globe. This explanation is based upon the anatomical fact that the subvaginal space around the optic nerve is at the optic foramen continuous with the subdural space, and can be injected from it. Hence, when the subdural space becomes overdistended in consequence of increased intra-cranial tension, the subvaginal space becomes over distended too.

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[1] *Royal London Ophth. Reports,* 1871, page 130, and *Medical Times and Gazette,* Feb. 28, 1874.

[2] The original paragraph in the lecture relating to the effects of increased intra-cranial tension has been omitted, and the following account, condensed from Dr Gowers's admirable manual on the ophthalmoscope, substituted.

[3] *Loc. cit.*, p. 63.

Schmidt believes that the effect is not purely the result of mechanical pressure outside the nerve, but that irritation of the optic nerve fibres in the retina is produced by the passage of liquid from the subvaginal space, *i.e.*, from the encephalon, through the lymph spaces in the lamina cribrosa. This view is based upon the anatomical fact, that if a coloured liquid be injected into the subvaginal space, it will pass into the fundus through the lamina cribrosa, presumably through lymph spaces existing in that structure.

Against the mechanical theory it is urged—*Firstly,* That cases of increased intra-cranial tension are met with in which there is no optic neuritis. This is certainly extremely rare in cases of intra-cranial tumour, but is of frequent occurrence in chronic hydrocephalus.

The explanation of such cases is difficult, but is probably to be found in the peculiar conditions under which the pressure occurs. In the vast majority of cases of chronic hydrocephalus the condition is either congenital, or the increased intra-cranial pressure commences before the fontanelles are closed. In such cases the effects of the pressure will be compensated for by the yielding of the unossified portion of the cranium. In such cases, too, the condition under which the pressure occurs may prevent the distention of the sheath. Such was actually found to be the condition of matters in a case reported by Gowers—a case of old neuritis due to a tumour occupying the whole of the third ventricle and intra-peduncular space, and extending in front of the optic commissure, and causing enormous distention of the lateral ventricles. The optic sheaths, carefully examined *in situ,* were quite empty. They were, however, loose, and had evidently been much distended.[1]

Some of the cases of intra-cranial tumour in which there is increased intra-cranial tension without optic neuritis are to be explained by the fact that the condition has been of too short duration to admit of retinal changes. In others, the rare cases in which this explanation will not suffice, there is probably some structural alteration in the condition of the optic nerve or discs which prevents the usual effects being produced.

In one of my patients, a case of intra-cranial syphilis, well-marked optic neuritis was present at the time of his first admission to hospital. Under appropriate treatment, full doses of iodide of potassium, the inflammatory condition of the discs, as well as the general symptoms, subsided, leaving very slightly ophthalmoscopic appearances behind. In the course of a year the general symptoms (headache, vomiting, convulsions, etc.) returned, and, after they had continued for some months, the case ended fatally. The optic neuritis never returned, and it would appear that the attack of optic neuritis which occurred at the commencement of the case had produced some structural alterations in the condition of the parts which prevented the recurrence of the mischief.

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[1] *Loc. cit.,* p. 68.

It is difficult to explain cases such as this on any other than a mechanical theory, for we know as a matter of experience that, under ordinary circumstances, one attack of neuritis predisposes to a second.

Secondly, That optic neuritis is sometimes seen in cases of intra-cranial tumour in which there is no increased intra-cranial tension. Such cases undoubtedly occur, but they are rare. They only prove that optic neuritis may result from other causes than increased intra-cranial tension. The explanation of such cases is probably supplied by the second theory.

2. *That the inflammation of the discs is due to descending neuritis*, the inflammation spreading from the seat of the tumour, along the fibres of the optic nerve, to the papilla. This theory, which Dr Gowers seems to favour, undoubtedly accounts for some of the cases, more especially those in which the optic nerve fibres are directly affected by the pressure of a tumour or inflammatory products, but it fails, I think, to give a satisfactory explanation of the great majority of cases; at all events, in the present state of our knowledge on the subject, we must consider it as "*not proven*."

According to this theory, the irritation produced by a tumour in any part of the encephalon spreads along nerve fibres to the optic nerves, and hence to the eyeball.[1] But if this were the case, double optic neuritis should frequently occur in other cases in which there is chronic irritation of the cortex or other parts of the cerebrum, as, for example, in chronic meningitis of the convexity, general paralysis of the insane, irritation as the result of an extravasation of blood, etc. But we know as a matter of fact that double optic neuritis is of rare occurrence in these conditions. This argument seems opposed to the "descending neuritis" theory, but its force, so far as general paralysis is concerned, is considerably lessened by the fact that primary (gray) optic atrophy is common in that affection, and hence the (atrophied) optic discs are not in a condition to become inflamed.

3. That it results from vaso-motor changes in the optic disc, and that these vaso-motor changes are produced by the local irritation (of vaso-motor nerve fibres passing between the encephalon and the fundus) produced by the tumour.

This theory, which is supported by Dr Hughlings Jackson, is based on negative evidence. It is only accepted as a possible explanation by those who disbelieve in the other two. The same objection, though it is possibly not a very strong one, as the one which I have urged against the "descending theory" seems to apply here.

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[1] Gowers throws out the hint that the optic nerve fibres in the fundus may become inflamed as the result of centric irritation, such as the pressure of a tumour, independently of any coarse change in all the intervening parts of the nerve.

The conclusion, then, which, with all deference to such distinguished authorities, I am inclined to adopt, is that in some cases the condition (optic neuritis) is the result of descending neuritis, but that such cases form the exception, not the rule, and that in the great majority of cases of intra-cranial tumour the changes in the papilla are the result of increased intra-cranial tension, as Manz and Schmidt suppose.

The important practical fact to remember is, that *double optic neuritis is present in the great majority of cases* (this statement should be qualified by the words, *at some period or other of their course*), and that it is the most important of all the symptoms of intra-cranial tumour.

As a rule optic neuritis is present when the patient seeks advice. This is more particularly the case in hospital practice, for hospital patients do not generally come under observation until the case is pretty well advanced, *i.e.*, until the tumour has caused sufficient intra-cranial tension to produce changes in the discs.

Where, however, the case is seen very early, as is most likely to happen amongst the upper classes, there may be as yet no neuritis. In such cases intra-ocular changes will in all probability appear as the case progresses.

Again, the optic neuritis may have been present and may have disappeared under treatment, leaving little or no obvious alteration ot the discs. Such an event is most likely to occur in syphilitic cases.

In the majority of cases the optic neuritis commences gradually and continues for a long time. When it subsides, well-marked changes are usually left behind, the most common and striking being optic atrophy.

Another point which I wish to impress upon you is this, that *optic neuritis is not necessarily attended with any loss of central vision.*[1]

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[1] Dr Hughlings Jackson says on this point:—"In all cases of cerebral disease the ophthalmoscope should be used whether the patient has defect of sight or not. For it is quite certain that there may be extensive changes of neuritis,—those even of stage *b*, for instance, when the patient does not know that there is anything the matter with his sight, and when he can read the very smallest of our best type. The early stages of optic neuritis (*a* and even *b*) are, I believe, not unfrequently overlooked by those who do not use the ophthalmoscope until sight begins to fail. Thus a much later stage (*c*) may be taken for the first stage of the neurotic process. Indeed, optic neuritis may be altogether overlooked by those who do not use the ophthalmoscope by routine in cerebral cases, as the neuritis may retrocede from the second stage (*b*), in which case, as above remarked, there may be no defect of sight. And when there is failure of sight, it is often quite out of proportion to the abnormal ophthalmoscopical appearances, or, more correctly, to what we theoretically should infer from the degree of those appearances. This is so also of syphilitic and albuminuric neuro-retinitis, even when in the latter there are hæmorrhages. Hence, in all cases of cerebral disease, you should

In the case of the little boy there was nothing—either in the external condition of the eyes or in the state of vision—to lead us to suspect that any alteration would be found on ophthalmoscopic examination. Exactly the same fact (well-marked double optic neuritis with perfect vision) was present in another case, which most of you will doubtless remember, for it was one of those cases which leave a lasting impression on the mind.

CASE III.—The patient, a well-nourished, fairly healthy-looking girl, æt. 20, was admitted to this infirmary under my care on January 5th of the present year (1877), complaining of headache, giddiness, and vomiting. She had suffered occasionally for some years past from the same symptoms, but had been able to follow her employment until a short time previous to the date of her admission.

Her tongue was foul; the bowels constipated. There was no apparent organic disease. *Sight was good, for she could read with ease the smallest type.* The case thus far looked a very ordinary one, and before the days of the ophthalmoscope would have been dismissed as one of bilious derangement. An ophthalmoscopic examination, however, which showed the presence of double optic neuritis, at once gave a very different complexion to it. My diagnosis was an intra-cranial tumour, and since there was no suspicion of syphilis I ventured, as you will remember, to give an utterly unfavourable prognosis.

The patient improved under treatment (rest, ice to the head, and iodide of potassium); in fact, in a few weeks she thought herself quite well, but the very night before she was to leave the hospital she took a convulsion and died. This large tumour which I show you had destroyed the greater part of her left frontal lobe.

Optic neuritis, then, is not necessarily attended with any loss of central vision, a fact of the greatest practical importance, for it shows the fallacy of trusting to vision as an index of the condition of the fundus, and teaches the necessity, as Dr Hughlings Jackson has so repeatedly pointed out, of *a routine use of the ophthalmoscope.* In other words, whenever you have the least reason to suspect intra-cranial disease, as, for example, in a case of persistent or repeated headache, make a careful examination of the fundus.

B. Optic Atrophy.—This condition usually results, as I have already remarked, from previous optic neuritis. It is generally bilateral, but the atrophy may be more advanced on one side than on the other. In some cases the atrophy is primary, *i.e.*, it occurs without any previous neuritis. In such cases it is generally caused

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use the ophthalmoscope as a matter of course, just as you examine the urine as a matter of course. If you do not, you will often overlook a very striking pathological condition. At all events, you must never omit to use this instrument when the patient has severe headache."—Lectures on Optic Neuritis from Intra-Cranial Disease, *Med. Times and Gazette*, 26th August 1871, p. 242.

by direct pressure of the tumour or dilated cerebral ventricles upon the optic nerve trunk or chiasma. The appearance of the discs in a case of well-marked optic atrophy is seen in the drawing which I now show you.

Dr Hughlings Jackson draws a distinction between the appearances of the optic discs in these two forms of atrophy. He says:—"In the atrophy after optic neuritis, the edge of the disc is not distinct; the whiteness is a more opaque whiteness; the lamina cribrosa is not well seen, from remains of effusion; the arteries are thin, and the veins remain irregular; and we occasionally see very small whitish patches extending over the boundary of the disc on to the neighbouring fundus.

"As to the simple or spinal atrophy, I quote what Liebreich says of 'an atrophic slightly excavated papilla taken from a man, æt. 40, suffering from locomotor ataxy, and completely blind. The bluish-gray colour and great disturbance of the lamina cribrosa, and of the nerve boundaries, combined with the repletion of the vessels, especially of the veins, which, although thinner than in the normal eye, are considerably larger than in other cases of atrophy—all these appearances, although not characteristic of spinal amaurosis, seem to me to occur most frequently in such cases.'—*Atlas*, page 26."[1]

Where there is optic atrophy, vision is, of course, always seriously affected. In many cases it is altogether lost.

C. Hyperæmia of the Optic Discs, without Œdema.—I have already told you that in the great majority of cases of intra-cranial tumour double optic neuritis or optic atrophy are present when the patient first comes under observation. In the exceptional cases in which these conditions are absent we sometimes find the discs redder than in health, but free from œdema, the edges being well defined. In some such cases the veins of the fundus are large and dilated.

D. In other cases the fundus seems natural. Where the two last conditions (*C.* and *D.*) are present we may, from the associated symptoms, suspect the presence of an intra-cranial tumour; but the diagnosis can never be made with the same certainty as when optic neuritis is present.

Headache.—I have placed this as the symptom of most importance after double optic neuritis. It is very generally present, and is often the most prominent feature of the case.[2] The character of the pain varies. In some cases it is only slight, with paroxysmal exacerbations. In others the patient hardly passes a day without the most fearful suffering. In syphilitic cases the pain is generally worse at night. This is not pathognomonic of syphilitic tumours, for in other non-syphilitic cases, as in the case of the little boy already reported, the same period of exacerbation may be observed. The pain is sometimes referred to the whole head, at other times it is localized, and in some cases it corresponds more or less exactly to the position of the tumour. In subtentorial (cerebellar) tumours, for example, the pain is usually referred to the back of the head (occiput). When the pain is localized there is often tenderness on percussion over the painful spot; and I shall afterwards refer to the importance of skull percussion as a means of diagnosing the position of a tumour.

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[1] "Lecture on Optic Neuritis from Intra-Cranial Disease," *Medical Times and Gazette*, 16th Sept. 1871.

[2] Headache is, of course, one of the most common symptoms met with in practice, and may be due to many other conditions. Nevertheless, persistent or recurring headache, especially if severe, should always raise the suspicion of a coarse intra-cranial lesion.

Vomiting.—Next to double optic neuritis and headache, vomiting is the most frequent symptom. The great characteristic of cerebral vomiting is, that it is *purposeless*, *i.e.*, that it occurs without any obvious cause, at irregular intervals and at irregular times, and bears no fixed relationship to the digestion of food or drink. Cerebral vomiting is often (though by no means always) associated with a clean tongue. In many cases it is due to the disturbance of the cerebral circulation which attends any sudden alteration in the position of the patient. Hence it frequently occurs first thing in the morning, when the patient rises from the recumbent position.

According to Dr Hughlings Jackson, "the more rapid the progress and the younger the patient, the more likely is there to be vomiting."[1]

Giddiness or Vertigo.—This, too, is a very common and often an early symptom. The vertigo which occurs in connexion with cerebral tumour is, like vomiting, in many cases due to the changes in the cerebral circulation which result from alterations in the position of the body (more correctly, of the head to the body), as, for example, stooping. This form of vertigo is of short or momentary duration, and may be called "*circulatory.*"

In other cases the giddiness depends upon a lesion of the centre which regulates the position of the head to the body. The exact position of this centre has not as yet been definitely determined, but it is probably situated in the cerebellum.[2] Or it may result from the tumour pressing upon the 7th pair of nerves, and causing irritation of the nerve fibres which proceed from the semicircular canals (the endorgans which regulate the position of the head to the plummet line of the body) to the co-ordinating centre for the position of the head in the cerebellum.

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[1] "Clinical Lectures on the Diagnosis of Intra-Cranial Tumours," *Medical Times and Gazette*, 15th Nov. 1873.

[2] In an able paper, read before the *Medico-Chirurgical Society of Edinburgh* on January 4, 1881, and which is given in abstract at page 748 of this Journal, Dr M'Bride enters very fully into the physiology of vertigo, and agrees with Dr Burdon Sanderson and other authorities, who think that the centre to which the fibres from the semicircular canals proceed is probably situated in the cerebellum.

Part Second.

REVIEWS.

Neurological Contributions. By WILLIAM A. HAMMOND, M.D., etc., assisted by WILLIAM J. MORTON, M.D. Vol. I., No. 2. New York: 1880.

The Problems of Insanity: a Paper read before the New York Medico-Legal Society. By GEORGE M. BEARD, A.M., M.D., etc.

A Reply to Criticisms on "The Problems of Insanity," with Remarks on the Gosling Case, delivered before the New York Medico-Legal Society, 16th April 1880. By GEORGE BEARD, A.M., M.D.

Morbid Fear as a Symptom of Nervous Disease. By GEORGE BEARD, A.M., M.D., etc.

National Association for the Protection of the Insane and the Prevention of Insanity. Boston: 1880.

IN this the second number of his *Neurological Contributions*, Dr Hammond renews his attack upon the abuses in American asylums. He insists that restraint is still far too common, and dwells upon the inhumanity of the "Utica crib," and the roughness and cruelty of the attendants. The following passage will show what he himself proposes:—"The absolute and irresponsible power of the superintendents must be taken away, and hospitals for the insane must be organized exactly as are all other hospitals. There must be resident physicians or internes to carry out the directions of a corps of visiting physicians and surgeons constituting the medical board. No reasonable person," adds Dr Hammond, "can doubt the advantages of such a change." The paper on the effects of alcohol upon the nervous system, though containing nothing new, is readable and full of good sense.

The pamphlet of the National Association for the Protection of the Insane is designed to promulgate views similar to those advocated by Dr Hammond on the necessity of using less restraint in the treatment of lunatics in American asylums. The president is Dr Wilbur of Syracuse, and amongst the members are Dr Beard and Dr E. C. Seguin of New York, and Dr J. S. Jewell of Chicago.

The rest of the number of the *Neurological Contributions* is made up of reports of cases occurring in Dr Hammond's clinique. Some of Dr Morton's notes are trite enough, such as those on the treatment of chorea with arsenic; others are curious and suggestive. He has three cases of "hallucinations of hearing not becoming delusions," all successfully treated by the bromides. One of these patients, who had been a hard drinker, heard voices saying, amongst other things, "What is the use of seeing a doctor?" Dr Morton remarks that these mischievous voices, which failed to delude the patient, are not to be considered as evidence of insanity; and we are pleased to learn that under treatment of 30 grains of bromide of potassium three times daily, kept up for two weeks, the hallucinations disappeared. The notes are short and to the point. A line or two more upon the treatment pursued by Dr Hammond would sometimes be welcome.

Dr George Beard is a physician who takes broad and general views of insanity and its relation to other diseases, as well as its surrounding conditions. Not only is he a clear thinker, but a good writer, and he brings out conclusions evolved from ripe study in a forcible and readable style. A philosopher like this is much needed to generalize and explain the mass of facts continually poured forth by the medical press, though it is a much readier way to gain celebrity to find cells with four or five processes in the cortex cerebri, or to describe brains which want the corpora albicantia. With a writer like Dr Beard it will be better to give a few quotations than to spend our space either in praise, criticism, or comment.

We dare say Dr Beard will be pleased to have his definition of insanity quoted, as he roundly asserts it to be, "on the whole, the best definition of insanity that has ever been presented," and that it has the merit of "going into the brain by a single shot." "Insanity is a disease of the brain in which mental co-ordination is seriously impaired." Perhaps it is but fair to Dr Beard to explain that he has been provoked into giving so frank an expression of his admiration for his own definition by the no less frank opinion of his friend Dr Hammond, who said that it was "the worst ever given."

Dr Beard, in his *Defence of the Problems of Insanity*, thus deals with the question whether insanity is rare amongst savage peoples:—

"In regard to the thoroughness of my study of the customs of savages and the diseases among them, it is proper that I should say that I have read hundreds of works of travellers among them, and have almost, if not quite, exhaustively canvassed all those facts in relation to all the nations of the earth that shed light on the nervous system. My opinion does not make science—science is only science when it is brought into a verifiable state. All that I claim in regard to the nervous condition of savages can be verified by those who have opportunities of obtaining knowledge on the subject.

"I gave much time to this study at the period I was making these researches. I did what I never did before, and would never do again, that is, gave a whole summer vacation to the inquiry. On this particular subject my researches were, I think, fully as extensive and trustworthy as those which Mr Herbert Spencer has since made in his work on Sociology. I did not content myself with merely studying the works of travellers, but corre[illegible] extensively with persons qualified to observe in different parts of the world, and consulted specialists in personal interviews. My conclusion is that if, outside of pure mathematics, there is any fact of science that can be absolutely proved, it is this, that among savages and barbarians insanity and allied nervous diseases, although they do exist to a certain degree, are very rare indeed; and that they increase and multiply, developing new phases and varieties, with the progress of civilisation. No man that travels over the road that I have travelled in this inquiry can come to any other conclusion—it is outside of the range of discussion, dispute, or doubt. To him who becomes expert on this subject this is as demonstrable as the Corpernican theory to astronomers. You say these travellers are non-experts; but it does not require an expert to make a diagnosis on insanity, in the majority of cases. Even in civilised lands a diagnosis of insanity is usually made by the friends of the patient, and correctly made. It is only the masked, intermittent, subtle forms that require expert skill. You do not ask for a microscope to see a mountain."

Dr Beard affirms that the statement that savages kill their lunatics "is only true in a very limited extent." He believes that native-born Americans are the most temperate people in the globe. "In the history of mankind," he writes, "outside of Mahomedanism, there is no precedent for the approximate abstinence from alcoholic liquors that is observed among Americans, especially of the brain-working class. But, at the same time, there is no country in the world where, in proportion to the population, there is so much of the nervous disease inebriety as in America; and it prevails among those classes where there is the least drinking."

The following passage from *The Problems of Insanity* correctly indicates a fresh path of study:—"The best thing to do with disease is to prevent it; the next best is to cure it when it first appears; the last and least important of all, is to attempt to cure its later stages; and it is with this last and least important duty that the asylums of the world are mainly occupied. When the time comes, as it will, when physicians shall be taught in the schools and the text-books both how to diagnosticate and to treat the premonitory and warning signs of insanity, then the prognosis will be helped by a great percentage, and the statistics of asylums will give, and indeed they give now, but a most imperfect picture of what therapeutics of the modern school in expert hands can do for the treatment of the insane. The practical problem of the future is, how to educate physicians in the study of insanity so that they shall know its premonitory symptoms, and treat and cure it before it appears, or just after it appears. Already they are doing this for other diseases of the nervous system; they will in time do it for insanity. Already physicians in this country, and to a limited degree also in Europe, are beginning to study neurasthenia, which is the door that opens into so many phases of mental disease, and they are beginning to treat it and cure it, and to hold it in check so that it cannot and shall not go beyond itself. The insane must be treated before they are insane; we must arrest these cases on their way to the asylum; we must seize them in the vestibule; we must snatch them away before the door closes upon them. There are a large number of cases of neurasthenia, of hysteria and the allied disorders going on to insanity, and a large number of cases of insanity itself, as melancholia, and even mania, that can be treated, that ought to be treated, and that will be treated at home under the eye of nurses and friends, in the direct and skilful charge of a family physician, with the aid, if need be, of experts in the nervous system, on the same principles and by substantially the same methods as they now treat other diseases of the nervous system. Already this is being done; already our best physicians in city and country are curing insanity without thought of an asylum, and they will do this far more in the twentieth century *than now.* The problems of insanity are to be solved outside of asylums more than in them. *There is no prospect that the results of treatment with the very chronic insane will ever be very much more satisfactory than they are now.* In almost all *organic* nervous diseases of long standing the cures are not very much more numerous than they were centuries ago. Every day of delay diminishes the chances. To treat the insane after they have become insane is like taking in sail after the cyclone is fully upon us. Three-fourths of the cases in asylums are cured in the first nine months."

In the third pamphlet Dr Beard treats of the different varieties of morbid fear associated with brain exhaustion or neurasthenia. He mentions astrophobia, or the fear of lightning; agoraphobia, or Platzfurcht, so well described by Westphal; mysophobia, or the fear of being soiled or contaminated, as described by Hammond; gynephobia, or morbid shyness to women, and so on. These affections, which are not so rare when one is fairly aware of their existence, come much oftener before the general practitioner or consulting physician than before those who set themselves apart to study insanity.

Martin's Atlas of Obstetrics and Gynæcology. Edited by Dr A. MARTIN, Docent in Gynæcology in the University of Berlin. Second Edition. Translated and edited, with additions, by FANCOURT BARNES, M.D., F.R.C.P., Physician to the British Lying-in Hospital. London: H. K. Lewis: 1880.

WE are glad to see this valuable atlas presented to the profession in an English dress, as it deserves the widest circulation, and will prove extremely useful.

We accordingly consider that Dr Faucourt Barnes deserves the sincere thanks of that ever-increasing proportion of our profession who are interested in gynæcology and obstetrics, for undertaking this duty.

The plates are fairly well reproduced, and after a careful comparison with the last German edition we think the impressions are very little behind those in it, except that some of the stones appear to have become slightly worn out. The additions by Dr Barnes from his father's plates are important, but scarcely in keeping with the style of Martin's work, and form only a doubtful improvement.

But when we turn to the letterpress we are absolutely thunderstruck by the glaring evidences it exhibits of the elementary knowledge of German which Dr Fancourt Barnes possesses. Luckily in an atlas the literary part is subordinate, and on the whole is of little importance, as the plates help the reader and explain themselves. But the translator of any work ought at least to be able to turn into sense an idiomatic sentence of the language he is engaged in translating. Now, so far as we can make out from the volume before us, Dr Fancourt Barnes is perfectly innocent of such capacity. From the preface to the end of the book the letterpress bristles with instances in which the meaning of the author is mangled and missed through sheer inability on the part of the translator to comprehend the syntax of the language he professes to translate. It would lead us too far to point out the tenth of them, and, besides, would prove a most uncongenial task. But after what we have been compelled to say, we must be allowed to direct attention to a few of these.

Page v., preface. This sentence occurs as a translation of "so fordert es die Praxis, welche längst an der artz, der Geburtshelfer ist, auch das Verlangen der Hülfe in so genannten Frauenkrankheiten richtet."—"The practice which had long ago forced itself upon the obstetrician, also required a knowledge of the so-called diseases of women." Here Martin is contrasting the requirements of the art and science of midwifery, and the sentence plainly means,—So likewise does the practice of the art require it, which has for a long time directed towards the physician, who is an obstetrician, its desire for assistance in so-called diseases of women.

At page vi. the following sentence occurs, which is certainly difficult to understand:—"When acrobatic tricks of this kind are resorted to in addition to the compilation of fixed rules of action in childbed, it is a question if the pedantry of the teacher is not to be deplored, or, in some cases, if the student who, trammelled by technicalities, goes wrong, when things do not correspond with the theory he has learnt, is not to be condemned." The plain meaning of this mystical sentence, when a little regard is paid to its grammatical construction, is as follows: "If use is made of such acrobatic tricks for the formation of rules of treatment at the bedside, the question assuredly is raised whether the pedantry of the teacher is to be deplored, or whether in any particular case the student ought to be condemned, who, if the real circumstances do not quite correspond with the theoretical representation, makes a mistake in the selection of the procedure to be adopted, and finally goes wrong in his art."

At page viii., "Fachwissenschaft" is incorrectly translated "our profession," when it means the scientific knowledge of our branch of the profession.

At end of figure 2, table VI., "betrug" is translated "measures," instead of "measured." Fig. 2, "gedrängt" is translated "drawn," instead of "pushed or displaced."

Plate X. figure 2, P. appears to us perfectly unintelligible. It runs thus: "Peritoneal covering, from which its muscular leaves rise, and from which they overlap each other." It should be: Peritoneal covering from which the muscular leaves take origin, and from which they hang down, lying one over the other like the tiles on a roof."

Plate XIII. figure 1, E. "Vielen" means "many," not "some." D., "turned inwards," makes nonsense. It should be "drawn inwards," which makes sense.

Dr Fancourt Barnes appears sadly puzzled what to make of "vergl." Sometimes he omits it altogether, but most frequently translates it "accompanying." How in the world it never occurred to him that it meant "compare" is difficult to understand. See plates XXI., XXII., XXIII. fig. 2, XLVII., etc., etc., for his comical attempts to get at the signification of this simple contraction.

In regard to the Latin quotations, we notice gross irregularities in the use of points which lead to violation of all the principles of grammar, and make the references nonsensical. The original work, on the other hand, is careful to observe that the quotations shall have a meaning, and they are in it written correctly to the minutest details. See plate XXXIV. fig. 1, also plates XXXVI. figs. 1 and 2; plate XXXVII. fig. 1, etc., etc. It would surely have been better to have omitted the Latin references altogether than thus to show to the world that the editor had no idea what they signified. "In.," when used as a contraction for "inauguralis," is uniformly treated by the editor as the preposition "in," which of course does not improve either sense or syntax.

Plate XL. fig. 3, "umgebogene" is translated "laid open"—it used to mean "bent round," and it seems to do so here also.

In plate XLIV. fig. 3, the author, through gross blundering, misses the meaning entirely. Instead of "The cervical canal is markedly S-shaped, the mucous membrane of the cervix and the glandular tissue of the body of the uterus are degenerated," it should run—"The cervical canal is markedly S-shaped, its mucous membrane, as well as that of the body, is the subject of adenomatous degeneration." Clearly Dr Fancourt Barnes did not see what he could make of "adenomatös," and can scarcely be congratulated upon the random shot he has made to get over the difficulty.

Plate XLVIII. fig. 2, "Prolapse of uterus" ought to be "Prolapse of rectum."

Plate XLIX. fig. 1, a, meaning missed through inability to construe the sentence. It should run—"Inverted vaginal wall covered with dense epithelium similar to epidermis," and not, as given, "Inverted vaginal wall with thickened epithelial-like epidermis."

Plate LIII. fig. 4, "von hinten" is not translated. It should be—"The cancerous uterus of fig. 3, with the tubes seen from behind," otherwise it would make Martin merely repeat fig. 3.

Plate LV. fig. 1, e. d., is rendered unintelligible by the translator's blunders. "The dark parts between the ramifications of the stroma are clearly seen on the cut surface—some larger, some smaller, and are cysts of the size of peas," ought to run, "The intermediate parts *drawn* in darker shade represent cysts plainly visible on the cut surface, some quite small, others larger, up to about the size of a pea." It does not seem to have occurred to the translator that he was describing a drawing, not a preparation.

But the next sentence is much worse. "The lighter and more clearly striped part appears microscopically (*sic*) to be composed of solid connective tissue, and to be free from cysts, but small cysts of the same structure are to be seen by the microscope." One is fairly puzzled what to make of this sentence, and is tempted to think it is meant as a conundrum. On reference to the original, we find that it ought to run thus:—"The clearer and more lightly (drawn) part is *macroscopically* quite solid connective tissue apparently free from cysts; microscopically, however, there can be demonstrated cysts of the same character, though in very small numbers."

Plate LVIII. fig. 1, "Ziemlich" is translated "apparently"—a sense it never possesses. It ought to be "somewhat." Fig. 2 "wiederum verzweigte" is translated "ramifying backwards," which is incorrect. It ought to be, "again branching."

As our intention has been merely to point out mistakes indicating a most imperfect knowledge of grammar on the part of the translator, and which mar almost every page of this volume, but not to offer a corrected edition of the book, we willingly take leave of this uninviting subject.

We sincerely hope that before Dr Fancourt Barnes undertakes the translation of another German work he will endeavour to acquire a slight idiomatic acquaintance with that valuable language.

Lectures on Digestion; an Introduction to the Clinical Study of Diseases of the Digestive Organs. By Dr C. A. EWALD, Docent in Berlin. Translated by ROBERT SAUNDBY, M.D. Edin., Assistant Physician to the General Hospital, Birmingham. Williams & Norgate: 1880.

A FEW weeks ago one of the London journals remarked that this was not a work for the general practitioner. We dissent from this opinion, inasmuch as we have formed a more favourable estimate of the general practitioner than that apparently held by the

London reviewer. We believe him to be capable of appreciating productions marked by originality, and we therefore beg to recommend this work to him as well as to the physician.

The work is one which merits our unqualified praise. As a masterly exposition of all that is at present known of the digestive processes, and as a physiological prelude to more purely clinical studies, it certainly removes a want in our medical literature. The physiology of digestion has in late years been studied with such brilliant results as entirely to alter the aspect which it had but a few years ago, and the author's task has been to collect the varied and scattered results of recent research in order to pave the way for their practical application.

Two lectures are devoted to the processes of fermentation, and in the third and fourth are discussed the salivary glands and their secretion. The experiments of Heidenhain and Langley are fully detailed, and one old physiological "stager" is somewhat curtly dismissed—we refer to the often-heard-of sulphocyanide of potassium, now no longer to be regarded as a constituent of the salivary fluid. Of the next three lectures, which deal with the stomach, one of the most interesting portions is that describing the method by which Richet showed that there was only *one* free acid in the gastric fluid. The Richet-Berthelow method, by etherial solution of acids, is fully detailed, and the proposition of Hoppe-Seyler and Hofmeister, that peptone is to be regarded as hydrated albumin, is supported as a durable and valuable addition to our knowledge.

In connexion with this subject the author describes the experiments made by Koch and himself to test Schiff's idea that gastric ulcers are in relation with certain injuries to the central nervous system. The cervical or upper dorsal part of the spinal cord was divided in six dogs, and after some hours numerous little lenticular ulcers were found in the stomachs of these animals, along with typical gastric ulcers. All of these looked as if "punched out," and there was evidence of hæmorrhage, but not of inflammation, in the submucous tissue. No light was thrown by these experiments upon this singular connexion, so that the nexus between spinal injury and gastric ulceration still remains in obscurity.

Coming to digestion in the intestines, we are met by the observation, still so much needed, that the balance of evidence seems to incline to the view which regards the liver as concerned more in general metabolism than in digestion. In this same section Ewald allows that there is some relationship between the state of the pancreas and the diabetic condition.

The eleventh lecture deals with absorption, and under this head the author lays stress upon the fact that drugs have often more effect when administered by the rectum than by the mouth, from which, as well as from Leube's observations, he rationally concludes that rectal alimentation has a very definite future before it, especially in acute diseases of the upper part of the alimentary canal.

The last lecture contains a retrospect of the whole, and a general

survey of the digestion of different series of food elements. In the appendix is an examination of artificial digestive preparations, a table of the duration of gastric digestion, a *résumé* of Rutherford's experiments on biliary secretion, and several useful hints for practice.

The interest of the work is much enhanced by its being written by one who has himself done excellent service as an original observer. It is thus to be carefully distinguished from a mere compilation. To Dr Saundby great credit is due for the graceful English dress in which the work now appears; and in offering him our thanks for the benefit he has conferred upon us, we would express the confident hope that it will soon be familiar to a wide circle of readers.

Health Studies: a Third Course of Lectures delivered in the Lecture Hall of the Young Men's Christian Association. By H. SINCLAIR PATERSON, M.D., Author of "Studies in Life," "The Human Body," etc. London: Hodder & Stoughton: 1880. Small 8vo, pp. 209.

WE have read this book from beginning to end with much interest and satisfaction. Our limits preclude us from entering into details, but for the sake of readers it seems desirable to print the titles of the eight chapters into which it is divided:—"Food and Appetite;" "Exertion: Muscular and Mental;" "Worry: Production and Prevention;" "Rest and Sleep;" "Fastness;" "A Merry Heart;" "Disease Germs;" "Rational Principles of Medicine." Dr Paterson, who appears to be quite abreast of the time in physiology, sanitary science, and practice of physic, has a lucid, accurate style of composition, and views everything with the eye of common sense and with a steady reference to the dictates of morality and of religious obligation. The book is specially intended for young men entering upon life, but veteran practitioners of the healing art will find in it fresh statements of scientific truth well deserving their attention. It exhibits forcibly many results of modern inquiry which are apt to hold a subsidiary place in the present day, when the mere facts of physiology, including microscopic structures, the functions of particular organs, and other *arcana*, are so numerous that the teacher can have, we imagine, little time for many topics which used in former times to be handled in the chair of the "Institutions of Medicine."

Deafness, Giddiness, and Noises in the Head. By EDWARD WOAKES, M.D., London, Senior Surgeon and Surgeon to the Ear Department at the Hospital for Diseases of the Throat and Chest. Second Edition, enlarged and revised, with Illustrations. 8vo, pp. 224. London: H. K. Lewis.

HAVING carefully read both editions of this work, one is not at all surprised that a second edition has so soon been called for. To this second edition Dr Woakes has taken the opportunity of adding a number of fresh chapters and of re-writing some of the original papers. In so doing he has enhanced in no small measure the value of his book.

As a contribution to the ætiology and pathology of the diseases causing deafness, etc., it must at once take a very high position, whilst as a guide to the practitioner it will prove invaluable. He points out the various affections of the ear, their sources and ordinary termination in the child, the adolescent, and the adult. On the very threshold of the subject we have our hand put on the silken thread which is to be our guide through the labyrinth. Dr Woakes points out in a logical and concise manner the relations existing between irritation of various organs and tissues, the sympathetic nervous system, and localized inflammation at a distance from the irritated parts. This opening chapter serves as a key to the whole book, and it alone is worthy of a high place in our medical literature.

In the second chapter he insists most strongly, but not a bit too strongly, on the importance of attending to and diagnosing at an early date ear symptoms and diseases in the exanthemata, pointing out how timely interference here may be the means of preserving a patient's hearing powers, or even his life.

A third chapter is devoted to post-nasal growths and their influence on hearing power during the earlier periods of the child's life up to adolescence, after which there is a most interesting article on deafness arising from paresis of the palato-tubal muscles. A comparison is instituted between the progressive deafness described by Dr Weber-Liel and paretic deafness, in the latter of which there is, in addition to paresis of tensor palati and levator palati, paresis of the tensor tympani, so that the membrane is here perfectly lax, or rather normal in appearance, whilst in the progressive deafness the membrana tympani is depressed. Other points of difference are remarked and their causation indicated.

The vaso-motor pareses of adult life are touched on, and their importance as expressions of the condition of the nervous system taken up and dilated upon in a manner at once interesting and suggestive.

After valuable chapters on ear cough, ear sneezing, giddiness, noises in the head, etc., etc., we are fairly launched on to the subject of subjective phenomena in connexion with diseases of the ear and of the vaso-motor system. He takes as his basis the observations of Drs Moorhouse, Mitchell, and Keen on wounds of the brachial plexus, their influence on the ganglia in connexion with this plexus, and so on the parts supplied by branches from these ganglia. This and the following parts of the work, taken in connexion with the writings of the above-mentioned American authors, R. Bright and Sir B. Brodie in England, Charcot and his school in France, and several German writers, will prove of great interest to the reader, as the vaso-motor and trophic changes resulting from lesions of nerves are treated of in the same lucid and suggestive fashion that we have before had occasion to note, and the conclusions arrived at by the author will go far to clear up some of the much-vexed questions of counter-irritation, reflex paralysis, etc., which are continually cropping up in connexion with nervous and other diseases.

Where treatment is touched on, it is always shown to be of a rational character, and so to have almost the value of a scientific process.

We again congratulate Dr Woakes on the work he has given to the profession.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LX.—MEETING III.

Wednesday, 5th January 1881.—Dr P. H. WATSON, *President, in the Chair.*

I. *Professor Grainger Stewart* exhibited a case of ICHTHYOSIS CORNUTA which had been exhibited at the May meeting of the Society, last summer, by Professor Sanders. The case had improved greatly under treatment by means of an ointment of chrysophanic acid of 20 grains to the ounce, many of the horny masses having been removed, the face and chest having become almost quite clear of the disease, and the hands and feet greatly improved. He hoped that, under careful continuance of this treatment, the disease would be quite removed, but was more doubtful as to the permanence of the improvement.

II. *Professor Grainger Stewart* also introduced a PATIENT who had lately suffered from marked paralysis of hands and feet, and whose case is described in a paper which was to be brought before the Society at their next meeting. The patient was shown in the meantime, in case he should have left the Infirmary before February. It was shown that although the patient had been so completely paralysed as to hands and feet a few months ago, sensation, motion, and nutrition were almost completely restored.

III. *Dr Clouston* showed a very marked and characteristic case of MYXŒDEMA in a man of fifty, who had suffered from the disease for eight years. No cause could be assigned, and there was no neurotic heredity, except that his father died of a "paralytic fit."

He is a plumber, and had led a sober, steady life, and had never had syphilis. He had a bad attack of rheumatic fever sixteen years ago. All the symptoms have slowly progressed from the commencement of the disease, until there was now the cretinoid expression of face, the thickened, baggy, bulbous skin, the slow dragging walk, the thick, slow, drunken speech, the spade-like hands, and the feeling of numbness all over the body. Dr Clouston, however, pointed out that, as tested by the æsthesiometer, sensibility seemed almost normal. There was little inco-ordination of movement, but great weakness and slowness. The reflex action of the cord was much diminished, and the tendon reflex abolished. Dr Clouston pointed out as new features in this case an intense pain in the loins, an exaggerated stiffness in the morning on getting up, a stertorous breathing like coma with a running of the saliva from the mouth during sleep, and a complete falling out of the hair of the head, eyebrows, and eyelids. Mentally, the patient had once, in a cool, reasoning way, without depression of mind, attempted suicide by poisoning on account of domestic trouble. He is now slow in all his mental processes, has a hebetude of mind generally in intellect and feeling, but without delusions or technical "insanity" of any sort, faculties dulled, attention impaired, interest in life or in anything diminished, mental reflex response to stimuli slowly performed, sight impaired, hearing good, taste impaired, and smell almost abolished. Dr Clouston regarded the name myxœdema, given to it by Dr Ord, an unfortunate and misleading one, and that it would have been far better for him to have described it, as Sir William Gull had done, without giving it a name till we know more about it. It was another example of a disease being ticketed with a name from mere outside appearances. Dr Clouston regarded the disease as a trophic neurosis, and thought that its seat and origin were in the central nervous system.

IV. *Mr D. J. Hamilton* showed a patient in whom, through the kindness of Dr Watson, he had been enabled to make an experiment on the organization of sponge. In a paper formerly read before the Society, Mr Hamilton had stated that the vessels of a granulating surface were not newly formed, but were simply the superficial vessels of an exposed part which had been driven out in the form of loops as a result of the blood-pressure. The skin, under ordinary circumstances, retains them in their proper places. When this is removed the blood-pressure pushes them outwards. These displaced vessels carry with them certain of the connective tissue elements, and if any porous substance be placed over the part so as to afford, by its interstices, protection to the delicate capillary loops, the connective tissue elements carried into the interstices will proliferate, organize, and form new tissue. In order to test this theory, Mr Hamilton had made the following experiment:—The patient suffered from a round ulcer of the leg, the result of a cellular tissue slough. It measured five inches in diameter, and was from a quarter of an inch to half an inch deep. The greater part of it was half an inch deep. There was still, at the time of the commencement of the experiment, a slough of considerable size in one part. It had all along been in a putrefactive condition, and continued so during the experiment. A piece of sponge of fine texture, after being specially prepared, was cut so as exactly to fill the space—that is to say, it was five inches in diameter and from half an inch to a quarter of an inch thick. In a few days after application it was found to be adhering to the surface. In from ten days to a fortnight, it had become vascular on the surface, so that if pricked it would bleed. In a month a great part of it had disappeared, and its place was now taken by organizing granulation tissue. At the date of exhibition of the patient the whole of the sponge had become organized, and had disappeared in the wound. The wound was in a beautifully healing condition, and only from an inch to an inch and a half remained to be covered by epithelium. There was a tumour-like mass of new tissue opposite where the sponge had been applied. There was far less cicatricial contraction of the limb than there would be in healing by ordinary means. Microscopic examination of an excised portion entirely bore out the theory which had suggested the experiment. Further details will be given by Mr Hamilton in a paper to be published shortly.

V. *Dr Byrom Bramwell* showed a series of MICROSCOPICAL PREPARATIONS AND DRAWINGS illustrative of the pathology of infantile paralysis, and said: Although, Mr President, infantile paralysis is frequently met with in practice, yet it seldom happens that we have an opportunity of examining such cases post-mortem; indeed, so rarely is this the case, that in the list of *desiderata* lately issued by the Pathological Society of London infantile paralysis is mentioned as one of the subjects requiring illustration. I have thought, therefore, that it might be not uninteresting to the Society if I were to bring before your notice this evening some sections of the spinal cord of a case of infantile paralysis which, through the kindness of Dr Hamilton, I had an opportunity of examining when working in the Pathological Laboratory of the University. I have, too, to thank Dr Bishop and Dr W. Cash Reid for having kindly procured for me the following particulars of the case:—

The patient, a boy æt. 2½ years, was admitted to the North-Eastern Hospital for Children, under the care of Dr A. E. Sansom, on the 21st of March 1879, suffering from infantile paralysis, and died from diphtheria on 9th May of the same year. The attack of paralysis was of three months' duration. It was incomplete, and involved the right lower extremity.[1]

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[1] In the brief notes which I have received it is not stated whether the left leg was paralyzed or not.

Microscopical Examination of the Spinal Cord.—The lumbar region of the cord presented the typical appearances which constitute the lesion of infantile paralysis, viz., destruction and disappearance of the large motor nerve cells of the anterior cornua, together with atrophy of the anterior (motor) nerve roots proceeding from the seat of the lesion. In this case the lesion was comparatively recent (four and a half months' duration from the onset to the time of death). The nerve cells at the seat of the lesion were replaced by fatty globules; a considerable number of leucocytes were scattered through the anterior cornua, and, indeed, through the gray matter generally; the connective tissue corpuscles of the gray matter were more numerous than in health; some of the bloodvessels in the anterior cornua seemed abnormally large and dilated; fatty globules, similar to those replacing the nerve cells, were observed adherent to the outer coats of some of the vessels. The white columns of the cord were perfectly healthy.

The accompanying plates are exact copies (camera lucida drawings) of some of the sections shown to the Society.

Fig. 1 is a transverse section of the cord in the lumbar region, stained with carmine, cleared with oil of cloves, and mounted in dammar, with the membranes *in situ*. Between the membranes (dura and pia, the latter being in places slightly detached from the surface of the cord) many transversely divided nerve roots are seen. A few of them have got outside the dura in the process of mounting. On examining the section (in order to be seen properly, this and the other low-power figures should be held from 1½ to 2 feet from the eye) it will be seen—

1. That the right anterior horn of gray matter is somewhat smaller than the left. Possibly this did not result from the lesion, which only dated back four and a half months.
2. That nearly all the large motor nerve cells, with the exception of those of the inner group in each anterior horn of gray matter, have disappeared. (See also Fig. 6.)
3. That some of the anterior nerve roots are degenerated. This can even be perceived by this low power (20 diameters).
4. It may also be noted that the central canal is of large size. This was evidently physiological, and had nothing to do with the lesion. Under a high power the central canal was seen to be beautifully healthy.

Fig. 2 is a transverse section of the lumbar portion of the spinal cord of a child of the same age, prepared in the same manner, to show the normal appearance. Numerous large multipolar nerve cells are seen in the anterior cornua of gray matter.

Fig. 3 is a transverse section of the cervical portion of the spinal cord in the case of infantile paralysis. The lateral column on the left side is split up by a deep fissure and curiously misshapen. At the bottom (in the dilated end) of the fissure a bundle of nerve fibres, evidently a transversely divided nerve root, was

Dr Byrom Bramwell's Case of Infantile Paralysis.

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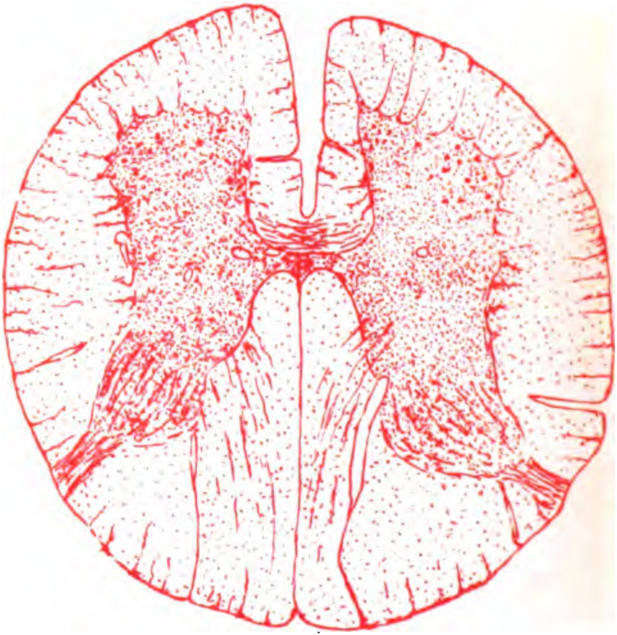

Fig. 2.—Transverse section of the lumbar portion of the spinal cord of a child, showing the normal condition of the anterior horns of gray matter. Stained with carmine, cleared with oil of cloves, and mounted in dammar. X 20 diameters.

B. B. del. ad nat. et lith

DR BYROM BRAMWELL'S CASE OF INFANTILE PARALYSIS.

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MEDICAL
OBSERVATION

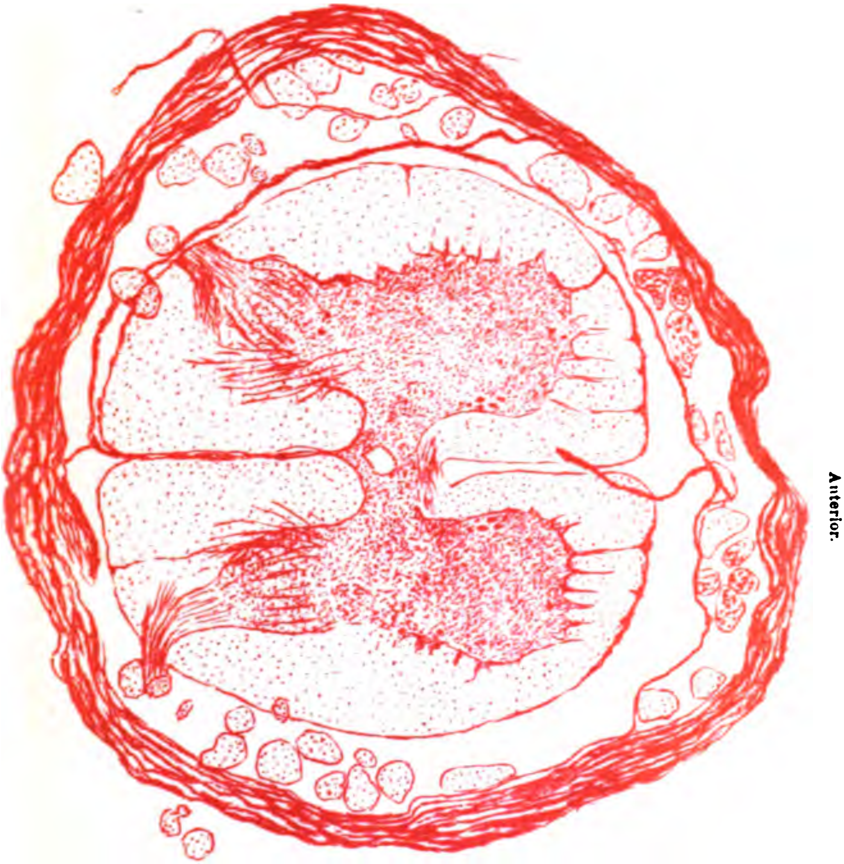

FIG. 1.—Transverse section of the lumbar portion of the spinal cord from a case of Infantile Paralysis; the membranes and transversely divided nerve roots *in situ*. Stained with carmine, cleared with oil of cloves, and mounted in dammar. X 20 diameters.

B. B. del. ad nat. et lith.

DR BYROM BRAMWELL'S CASE OF INFANTILE PARALYSIS.

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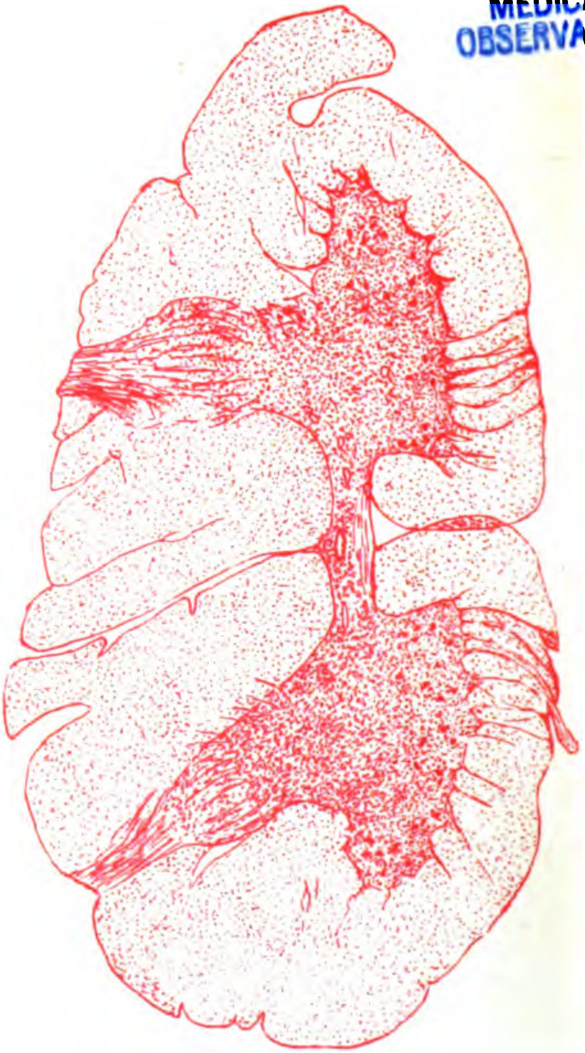

FIG. 3.—Transverse section of the cervical region of the spinal cord from a case of Infantile Paralysis, showing a (congenital) malformation of the lateral column. Stained with carmine, cleared with oil of cloves, and mounted in dammar. X 20 diameters.

B. B. del. ad nat. et lith.

Dr Byrom Bramwell's Case of Infantile Paralysis.

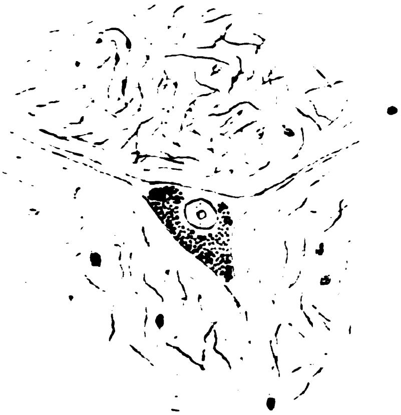

Fig. 4.—Large multipolar nerve cells from the anterior horn of the lumbar region undergoing fatty degeneration, stained with perosmic acid, and mounted in dammar. X 250.

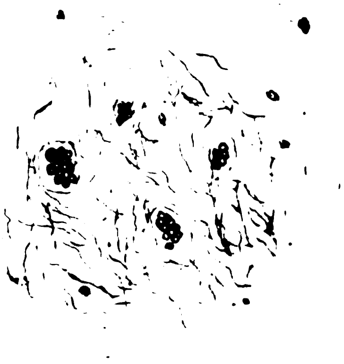

Fig. 5.—Portion of the anterior horn of gray matter in a case of Infantile Paralysis; the nerve cells have disappeared and are replaced by fatty particles, stained with osmic acid. X 250 diameters.

Note.—The fatty particles are not sufficiently black in the plate.

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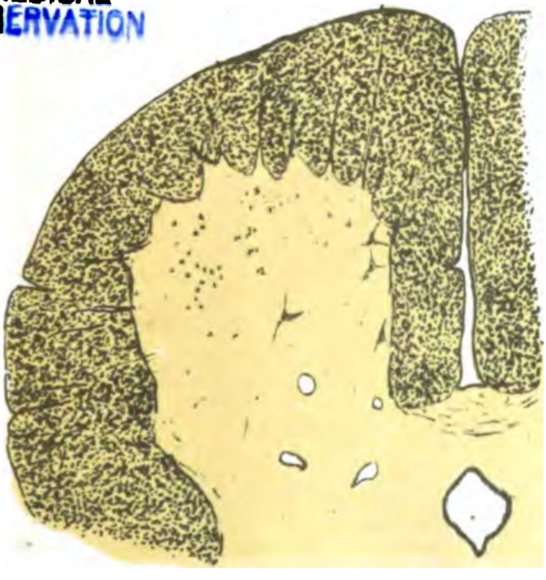

Fig. 6.—Transverse section through the anterior horn of gray matter in a case of Infantile Paralysis. Nearly all the nerve cells have disappeared and are replaced by fatty particles. X 35 diameters.

[illegible] R. del. ad nat. et lith.

Dr Byrom Bramwell's Case of Infantile Paralysis.

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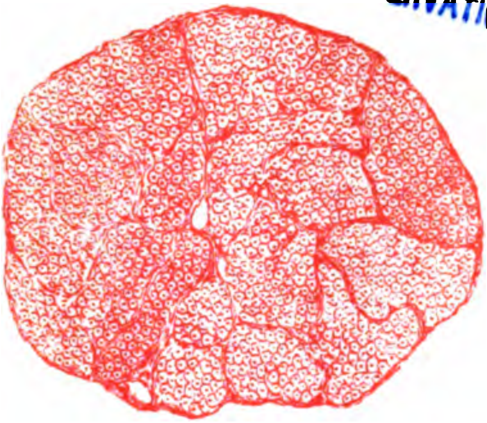

Fig. 7.—Transverse section of a healthy anterior nerve root from the preparation shown in Fig. 1. Stained with carmine, cleared with oil of cloves, and mounted in dammar. X 250 diameters.

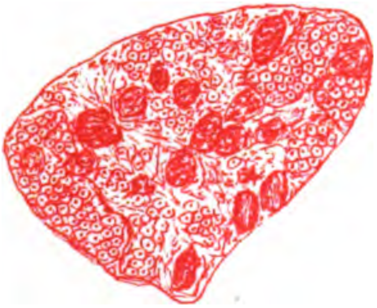

Fig. 8.—Transverse section of an anterior nerve root from a case of Infantile Paralysis, showing marked degeneration. The preparation is one of the anterior nerve roots seen in Fig. 1, more highly magnified. X 250 diameters.

B. B. del. ad nat. et lith.

situated. (In the particular section from which this drawing was made the bundle of nerve fibres has fallen out and is not shown.) This alteration in the shape of the lateral column was, I fancy, a congenital condition, and probably had nothing to do with the paralysis. The minute structure of the lateral columns at the seat of the malformation, and, indeed, of the cord above the lumbar region, was perfectly healthy.

Fig. 6 is a transverse section of the anterior horn of gray matter at the seat of the lesion (*i.e.*, the lumbar region of the cord), more highly magnified. The preparation is stained with perosmic acid and mounted in Farrant's solution in order to show the minute structure of the lesion (preparations prepared with oil of cloves and absolute alcohol do not show the fatty particles, which are dissolved by the spirit). Almost all the large motor nerve cells except the inner group have disappeared, and are replaced by dark granules, which under a high power (see Fig. 5) are seen to be fatty globules.

Fig. 5 is a portion of the same preparation (Fig. 6) more highly magnified (250 diameters), showing the minute structure of the dark granules seen under the low power (Fig. 6). These granules are composed of fatty particles darkly stained by the perosmic acid. They are evidently situated in spaces which formerly contained nerve cells.

Fig. 4 shows a large multipolar nerve cell from the case of locomotor ataxy which I described in the last number of this Journal, undergoing fatty degeneration. In this case the nerve cell still retains its beautifully normal shape; the nucleus is healthy; the fatty particles, which are seen in the body of the cell, are very much smaller than the fatty globules seen in the case of infantile paralysis (Fig. 5).

Fig. 7 is a transverse section of one of the healthy anterior nerve roots of the case of infantile paralysis (seen in Fig. 1), more highly magnified. Its structure is beautifully normal.

Fig. 8 is a portion of an adjacent nerve root to that shown in Fig. 7. Marked degeneration is seen; many of the nerve tubes have disappeared, and their place is taken by masses of connective tissue, which stain very deeply with carmine.

VI. *Dr Kirk Duncanson* showed the NECROSED BONY LABYRINTH which he had removed from the right ear of a deaf-mute girl nine years of age. She had suffered from "running ears" from her earliest infancy. No trace of a drumhead exists in either ear. The dark sequestrum of bone alone was visible, lying deep in the external auditory meatus. As it became movable it was gently loosened, and gradually extracted day by day as the case was seen. No bleeding requiring special interference took place. The external auditory canal was large and straight, so that no cutting was needed to remove almost entire the fragile mass. The separation of some such sequestrum appears to be going on in the left ear. In the specimen now before us we can trace the spiral of the cochlea, the vestibule, and the canalis communis of the posterior and superior semicircular canals. The continuation of the semicircular canals was broken off in the removal. The patient is weak mentally and physically, and it has been impossible to ascertain satisfactorily whether any trace of hearing power exists, either by speech, whistle, watch, or tuning-fork.

VII. *Dr Kirk Duncanson* brought before the members of the Society several INSTRUMENTS of value in aural surgery kindly sent him by Dr Samuel Sexton, of New York City, U.S.A.:—1st, Two pairs of delicate forceps, useful in the removal of foreign bodies from the ext. aud. meat., the insertion of artificial drumheads, etc. 2d, An oroscope, an instrument specially adapted to aid in explorations of the mouth and throat. The buccal cavity can be thoroughly examined by the use of the oroscope; and daily experience teaches that reflected neuralgia is so frequently a cause of aural disease that a careful examination of the teeth, etc., is necessary in all cases. 3d, A nose speculum made of steel, of a very light but strong construction. The instrument distends the nares to the required extent in a gradual manner by the separation of the handles, as in a pair of scissors. Dr Sexton prefers this method of dilating the nares to that of springs, elastics, etc., especially in the case of children and delicate persons. 4th, An aural powder insufflator (the instrument requires to be made on a larger scale) composed of two parts, one of which is used to scoop up the powder; the other is provided with a small soft rubber bulb for driving the powder out, and has a valve that prevents it from being drawn back into the instrument after its expulsion. All the metal instruments are nickel-plated and of good workmanship.

VIII. *Mr M'Bride* read a paper on the ETIOLOGY OF VERTIGO, of which the following is an abstract:—In relation to this subject, the theory was advanced that a nerve impulse striking the brain may, according to its intensity, involve a large or small central area. For instance, the pain caused by a carious tooth might be confined to those fibres of the fifth nerve corresponding to the tooth, or the impulse communicated along these fibrils might overflow and involve the central terminations of other fibrils, and even other nerves, producing earache, faceache, and mastodynia. It was, therefore, urged that nerve impulse communicated along any one nerve may overflow and involve other brain areas. Shock was considered to be an overflow of nerve impulse so powerful as to involve centres necessary for life. It was argued that vertigo is a definite sensation, and that for any sensation to be experienced a definite encephalic tract must become active. From experiments on animals, the effects of rotation in the human subject, and the phenomena of Menière's disease, it is known that stimulation of the nerves of the semicircular canals produces vertigo, and that therefore their central terminations must be in close relation with a vertiginous centre, which may (at least physiologically) be assumed to exist. We know, further, that irritation of the canals, if severe, is apt to cause vomiting, syncope, nystagmus, and other phenomena. It is therefore probable that nerve impulse communicated to the vertiginous centre tends to overflow and involve other centres (*e.g.*, the vomiting, cardiac, inhibitory, and oculomotor centres). Probably all these centres are in physiological relation (the central termination of the nerves of the semicircular canals, the vomiting, and the oculo-motor, as also the cardiac inhibitory); therefore impulses communicated to one tend to overflow to the others. In some persons it is justifiable to assume that a nerve impulse tends to overflow more readily on account of unstable equilibrium of the nerve centres, or perhaps of particular nerve centres. Nerve impulse also seems to spread in a definite physiological direction, as seen in the constant results of accidental or experimental lesions of the semicircular canals in man and the lower animals. Possibly this line of argument may be applied to the so-called explosive neuroses. If it be once admitted that vertigo may be produced by impulse applied to the oculo-motor centre, we have here an explanation of those cases where vertiginous phenomena are produced in animals after section of both auditory nerves. Vertigo may originate from causes (1) visceral, (2) ocular, (3) aural, as well as central (epilepsy, etc.) and general (anæmia, etc.) causes, as also through nerves of common sensation (pain). The general conclusions arrived at were—

1. That there is a cerebral area or tract, stimulation of which produces vertigo.

2. That this area may be stimulated by impressions ocular, auditory, sensory, or visceral, as well as central changes, and is in intimate physiological relation with the vomiting and oculo-motor centres. That is to say, impressions conveyed to one of those centres tend to involve the others by overflow of nerve energy.

3. That excessive stimulation of the vertiginous area will produce an overflow of nerve impulse to various motor centres, and probably unconsciousness.

4. That inasmuch as the phenomena of its excessive stimulation (as in rotated men or animals, Menière's disease, etc.) are represented by a definite train of symptoms, we may infer that overflow of nerve impulse usually proceeds in the same direction,—in other words, involves the same centres,—first those which are intimately connected with it, then those more remote.

5. That possibly the same process of reasoning may be applied to death from shock, epileptic attacks, convulsions, and some of the other so-called explosive neuroses.

6. That in typical cases, ocular, stomach, and auditory vertigo may be distinguished from one another by the centre first involved.

Thus we should expect that stomach vertigo would be preceded by nausea, if not vomiting; that ocular vertigo would be caused by changes in the motor apparatus of the eyeball; but that in auditory vertigo the giddiness is the first and may be the only symptom.

7. That sea-sickness is probably generally due to stomach irritation, for here, as a rule, we have first vomiting, and afterwards vertigo, which is, however, by no means a constant accompaniment.

IX. *Dr Byrom Bramwell* then read a paper on the DIFFERENTIAL DIAGNOSIS OF PARALYSIS. Starting with the proposition that paralysis is a symptom, and not a disease, the author stated that whenever this symptom is present we must endeavour to determine— 1. Is the paralysis genuine or not? 2. If genuine, is it organic or functional? 3. If organic, what is the position, extent, and pathological character of the lesion? The characteristic features of sham, simulated, functional, and organic paralyses were described, and the points on which reliance is to be placed in making a distinction between the various forms of paralysis included under each of these groups were minutely detailed.

Dr Clouston expressed his sense of the ability and elaboration of the paper, but remarked that in practice it was surprising how difficult it often was to apply rules of differentiation to some obscure cases of paralysis. He described the case of an epileptic with partial paralysis of infancy, under his care, in whom, at certain times, a transient attack of pure aphasia, without amnesia, without more hemiplegia, without the loss of the power of writing, came on and lasted for twenty-four hours, instead of the occurrence of the usual epileptic fit. He differed from Dr Bramwell in regard to the bowels or bladder not showing any sign of paralysis in hypochondriacal or "idea" paralysis, the speaker having experienced nothing more frequently than an ostentatious paralysis of those organs in such cases.

Dr Black remarked upon the existence of paralytic affections as a feigned disease in the army. He stated that the use of electricity was a useful means of diagnosis, from the actions of the muscles brought about in affected and non-affected parts of the frame. It was also serviceable, when employed for a longer period, as a means of successful treatment and cure in many analogous cases.

Dr Allan Jamieson said that the Society were in particular indebted to Dr Bramwell for the rules he had laid down for the diagnosis of hysterical paralysis. The early recognition of this form of paralysis was most important, and many present must remember cases where this had not been so satisfactorily determined as might be. Cases were even now before his mind's eye where much permanent harm had been done, especially in young women, where, had massage, enforced feeding, and a general tonic and encouraging treatment been carried out from the first, the results might not have been so disastrous. The Society were much indebted to Dr Bramwell.

Dr James Carmichael, in regard to functional paralysis, referred to the frequent occurrence of this condition in children. The causes of these paralyses were not always apparent, and a great deal had yet to be done in working out the etiology of the different classes of cases. He referred to a case which applied for advice at the Royal Hospital for Sick Children some months ago, in which a child, between three and four years of age, for several months had complete motor paralysis of one arm, coming on after a fright, which was certainly the exciting, and indeed the only, apparent cause. Complete recovery ultimately took place. Paralysis would often appear to be reflex in young children, sometimes caused by dental or intestinal irritation, such as the presence of worms.

Dr Byrom Bramwell thanked the Society for the manner in which it had received his paper, and the different speakers for their very kind remarks. He of course agreed with Dr Clouston as to the impossibility of formulating any rules which would enable us to make a diagnosis in all cases. He fully appreciated the difficulties which some cases present in practice. While strongly of opinion that the only true method of arriving at a diagnosis was to make a careful and thorough examination of the patient, and, having ascertained the facts of the case, to draw a logical conclusion therefrom, he thought that some such rules as he had indicated in his paper were decidedly helpful in actual practice; and that by keeping steadily in view the chief points on which the diagnosis turned, the examination was facilitated and time economized. He had seen some cases of sudden and temporary paralysis without loss of consciousness, such as Dr Clouston had referred to, and had reported one such case in the *Edinburgh Medical Journal*.[1] Dr Gowers, too, had recorded similar cases, and was of opinion that the cause of the paralysis was sudden inhibition of motor centres. His (Dr B.'s.) experience quite agreed with that of Surgeon-Major Black as to the value of the Faradaic current in the treatment and diagnosis of sham paralysis. He had not met with any case of permanent paralysis in a child due to fright, such as Dr Carmichael had described.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XL.—MEETING II.

Wednesday, 24th November 1880.—Dr ANGUS MACDONALD, *President, in the Chair.*

I. *Dr James Young* showed the UTERUS AND ANNEXA removed from a patient who had died suddenly from cerebral effusion. On examination their state was as follows:—Os uteri transverse and entire; uterine cavity 2¾ inches long, but otherwise normal. The right Fallopian tube is occluded and filled with a secretion which, on microscopical examination, is found to be chiefly pus. The right ovary has been removed, and the left ovary and fimbriated end of left tube are blended in one mass. Thin inflammatory adhesions exist between right Fallopian tube and uterus, and bladder and uterus. The patient had suffered from pelvic peritonitis, and had been sterile for many years—a state amply accounted for by the pathological condition described. She had been twice pregnant, but no child had been born for seven years. Menstruation was scanty. Various methods of treatment were tried, without producing any increase in the flow.

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[1] See "Cases of Intra-Cranial Tumour" Case VI.), *Ed. Med. Journal*, Dec. 1878, page 502.

II. *Dr Halliday Croom* read his paper ON THE SYSTEMATIC EMPLOYMENT OF ANTISEPTICS IN MIDWIFERY, which appears at page 712 of this Journal.

The President thought it a most important communication, and hoped it would give rise to an interesting discussion.

Dr Taylor felt grateful to Dr Croom for his paper, although he thought he put too much faith in carbolic acid. It was certainly a good antiseptic, but others were more effectual, namely, care and cleanliness. He had some experience in the Maternity of old days, as he was resident physician in it for nine months. During the previous nine months there had been thirteen deaths, and during the subsequent six months there had been six deaths. He found that the mortality was due to the internal arrangements, as the same unpurified mattresses were employed for successive patients. He had great difficulty in getting this arrangement altered. In addition to this, he had always one ward empty for a week; and a third thing was that great care was taken that the patient brought in no infection from without. To secure this last point every patient was put in a bath on entrance, even although the birth sometimes occurred in the bath-room. As the result of these precautions he had only one death during his nine months' tenure of office. This death was not due to puerperal fever; and he might remark that this special patient had been put into an uncleansed bed. He had never had a maternal death in his private practice. Dr Croom's description of the avenues of entrance for puerperal fever was very good. He had listened with pleasure to the paper.

Dr Keiller agreed with Dr Taylor as to the value of the paper. He remembered the period alluded to by Dr Taylor. Sir James Simpson had gone into the question of the causes of puerperal fever very thoroughly. He also insisted on the importance of the employment of fresh straw for each new case. He had no doubt as to the danger of hospitals. He believed the antiseptic treatment to be very good. He remembered asking Mr Lister if he thought his system of antiseptics could be carried out in midwifery. His reply was that it would be difficult, but that he thought it possible. One point he wished to insist on was that the nurses should not live in the Maternity Hospital, but in some place near. He thought that they should specially insist on women being very cleanly in their persons, especially during their menstruation. He was at one with Dr Croom as to the employment of antiseptics.

Dr Taylor alluded to a correspondence which appeared some years ago in the *British Medical Journal*, affirmative of the truth of a popular belief, that a woman during her menstrual period was unfit to manipulate ham in the process of curing, the general experience being that ham so treated did not keep. This correspondence was cut short by a leader from the editor, in which he dealt with this suggestive subject in a summary and unscientific manner. The truth was, that these popular beliefs were, as a rule, the result of intelligent observation and sagacious inference, and this one, at least, was supported by not only ample testimony, but constantly recurring experience. They were all aware that whilst in some women menstruation was a comparatively local process, in others it was accompanied by characteristic emanations from the rest of the body, and these, proceeding from the hands and reaching the pork in the process of rubbing, could hardly fail to contaminate it. In the same manner, if these emanations be brought into contact with the raw surfaces which seem to be a necessary contingent of parturition, how much more rapidly and certainly will mischief be done! If it affects raw pork, notwithstanding the intervention of salt used in rubbing, how much more rapidly will it be absorbed to the detriment of a living organism. Hence there is great need for the precautions which Dr Keiller suggests. Not only should the nurses be separately housed, but the grave question forces itself upon us, Should a menstruating woman be allowed to nurse at all in cases of parturition?

Dr Carmichael had listened with great satisfaction to Dr Croom's paper, and believed it would do good service in the profession. It was two years since the use of antiseptics in midwifery had been heralded in this Society, and they had the subject now regularly under discussion for the first time. He thought Dr Croom had demonstrated the danger of maternity hospitals, although he could not agree with Sir James Simpson in thinking they should be abolished altogether, as in large cities their existence was a matter of convenience as well as necessity. He thought Dr Croom's rules should be fuller. Thus the patient might lie on an antiseptic sheet, and so on.

Dr C. E. Underhill remarked on the interest of Dr Croom's paper. It was certainly striking that there were no deaths in the extern department. The antiseptic method advocated by him was much like that of Stadtfeld of Copenhagan. As to the causes of puerperal fever, he believed that it was very seldom autogenetic, as was shown by the comparative rarity of its occurrence in private and extern hospital practice. The poison was really introduced from without. He was astonished to find that the wards in the Maternity Hospital had so many beds, and thought this a serious mistake in arrangement in a lying-in hospital.

Dr James Young said that in private practice he used carbolic oil in all gynæcological cases as an antiseptic, and in obstetric practice he recommended the free use of Condy's fluid in warm water, or Condy's ozonised water, with which the patient was bathed at frequent intervals. Vaginal injections of the same were very useful, especially when the lochial discharge became fœtid. He could not boast of Dr Taylor's success, as he had had several deaths in his obstetric practice.

Dr A. H. Barbour thought the use of the term "antiseptics" in midwifery was a misnomer, as one could not keep vaginal or perineal wounds antiseptic. He thought it of importance to wash vaginal wounds and apply salicylate paste according to Gusseraw's plan. Schroeder washes out the vagina often, and uses constant intra-uterine irrigation in septic cases. In Prague injections are used as little as possible. He himself was of opinion that vaginal injections were beneficial.

Dr J. B. Buist thought that Dr Croom had in his paper hit a good many nails on the head. One cause of puerperal fever was a want of cleanliness on the part of the nurses. It seemed to him extraordinary that each physician began his quarter with a new staff of nurses. He did not think that the students carried infection. The real cause was to be found in the aggregation of patients and nurses. He admired the simplicity of Dr Croom's method. No one advocated Listerism in obstetrics, as that was impossible. The use of injections was uncalled for, as it introduced septic matter.

The President had listened with great pleasure to Dr Croom's paper. The practice advocated by Dr Croom was an extension of his own, with the addition of the spray (in operating cases) as recommended by Stadtfeld of Copenhagen. Undoubtedly the *sine qua non* in a maternity hospital was cleanliness. Still, one should not trust too much to carbolic oil, as Zweifel had demonstrated the occasional occurrence of septic bacteria in catgut kept in carbolic oil. Koch's and Ogston's experiments showed that carbolic acid in a five per cent. solution certainly destroyed the *materies morbi* in putrid pus, rendering it perfectly inert, and such a solution could easily be borne by the hands without inconvenience. As regards the word autogenetic, the French were undoubtedly right in rejecting the distinctions. They maintained that no such condition as autogenetic septicæmia ever occurred. If all outside influences were excluded, there was no possibility of the tissues generating septic poison. In regard to the criticism by Dr Barbour of the use of the term antiseptics, he thought Dr Croom quite right. He did not much fear the students of anatomy carrying contagion, inasmuch as the subjects they dissected were usually saturated in a disinfectant fluid, and, besides, were usually long kept in spirit. Dr W. Hunter taught anatomy and practised obstetrics without thereby causing any danger to his patients, so far as our information warrants us in asserting. At any rate, he had the most fashionable practice of his time in London. This he could not have done were it so dangerous for students to dissect and at the same time attend cases of midwifery as it is sometimes asserted. In private practice he thought systematic vaginal injections troublesome and unnecessary in ordinary cases. He did not recommend them except the case had been instrumental, or the patient had been subjected to a great deal of manipulation, as the *nimia diligentia obstetriciæ* could do harm as well as the *nimia diligentia chirurgiæ.* In his own report he had mentioned this as to the too free use of antiseptics. They could not be too particular in carrying out the rules given by Dr Croom. He was glad they were to have a permanent nurse in the hospital, and he hoped they would have better results for the future; but he could not adopt some of the favourable views of extern hospital and private practice mentioned. It was impossible to keep one's eye on extern patients long enough, and somehow, in private practice, there was a universal tendency to rapidly forget one's losses.

Dr Croom was extremely gratified that his report had been so well received. He could congratulate Dr Taylor from the bottom of his heart on the good results he had in his private practice. Carbolic acid was a good disinfectant; but he would employ any other one equally efficient. Mere cleanliness was not sufficient, as their Maternity experience had taught them. He thought with Dr Keiller that it would be very desirable if the nurses lived out of the Hospital in a building by themselves, as they do in the Royal Infirmary. The remarks of both Drs Keiller and Taylor on menstruation as a means of infection were most important and suggestive, and the field was a wide but a difficult one for study. He wished to point out to Dr Barbour that the use of antiseptics in midwifery did not mean Listerism. He therefore could not agree with Dr Barbour as to the term antiseptics in midwifery being a misnomer. He was anxious to draw attention to a point which he thought had been a little misunderstood, viz., that he used the spray only in operative cases.

Part Fourth.

PERISCOPE.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

PILOCARPIN IN DIPHTHERIA.—The effects of pilocarpin in diphtheria is, according to various German writers, most admirable. Dr Guttman (*Allg. Med. Zeit.*, October 9) says that, given internally, a free salivary discharge is established, by which the diphtheritic membranes are softened and dissolved; the inflammatory phenomena rapidly lessen and disappear, and the condition of the patient is speedily improved. Out of sixty-six cases, many of them severe, he *did not lose one*, and they all were cured in from twenty-four hours to three days. Last week fifty-two children died in Brooklyn of diphtheria. Sad reports of similar mortality come from other quarters. It is our duty to call the especial attention of American physicians to the extraordinary success which is now reported in Germany, in this disease, from the *muriate of pilocarpin.* It is given in ordinary doses internally, and a large number of cases have been reported by different physicians, wherein the results were astonishingly good. As soon as the pilocarpin exercises its specific effect on the salivary glands, the false membrane detaches, the inflammatory phenomena disappear, and improvement begins. We particularly request our readers to try this treatment and report their results, whether good or bad.—*Medical and Surgical Reporter*, December 1880.

THE ADMINISTRATION OF PILOCARPIN IN SYPHILIS.—G. Sewin found that, after the subcutaneous administration of pilocarpin to thirty-two syphilitic patients in the syphilitic wards of La Charité Hospital, twenty-five made good recoveries, that is to say, 78 per cent.; amongst these were not only cases of slight diseases, but several of a severe character, including one of gummatous periostitis. The duration of the treatment amounted in the shortest cases to fourteen days, in the longest to forty-three days, and upon the average to thirty-four days; the quantity of pilocarpin injected amounting to an average of 0·327 gramme (each injection being 15 mgrm.). It thus appeared to possess the same value as mercury in the different forms of syphilis, nor were relapses more frequent. Nevertheless Sewin prefers to undertake the cure of syphilis by the injection of mercury in the form of sublimate, on account of the less tendency in the latter method to collapse. Amongst the seven cases which were not cured with the pilocarpin, three suffered from such severe collapse that the administration of the drug had to be given up; expectoration of blood occurred in another, and in another endocarditis. In two cases in which severe symptoms of syphilis were present (pustules and extensive sclerosis of the mouth) no improvement occurred (*Charité Annalen*, B. v., 1878, p. 482).—*Practitioner*, January 1881.

TREATMENT OF SYPHILITIC ULCERS AND CHANCROIDS BY PYROGALLIC ACID.—Vidal found that an application of an ointment composed of one part of pyrogallic acid to five parts of vaseline brought about healing of a syphilitic ulcer that had resisted other measures. The same application he found to bring about healing of chancroids in a few days. The combination was the best of several that he tried. It caused moderate pain for eight or ten minutes (*Bull. Gén. de Thérapeutique*).—*American Practitioner*, December 1880.

THERAPEUTIC VALUE OF THE OLEUM GYNOCARDIÆ (CHAULMOOGRA OIL).—Professor Pick finds that the application of chaulmoogra oil in the eczema of scrofulous children is invariably mischievous, the application of the oil itself producing an artificial eczema. The internal use of the oil caused no change in the general health. On the other hand, old-standing eczema with considerable thickening of the skin, occurring in adults, underwent considerable improvement when the oil was rubbed in, either alone or in the form of an ointment. In prurigo the effects were negative, nor was the oil serviceable in any case of urethritis blennorrhagica. In two cases of lupus hypertrophicus of the face, violent inflammatory symptoms set in after the third or fourth application. In four cases of lupus of the hand, after from three to five applications, one application being made each day, the lupal nodes broke down, just as in cases where arsenic and pyrogallic acid had been used. No evidence of the value of the oil in lupus when administered internally could be obtained (*Prag. Med. Wochenschr.*, No. ii., 1880).—*Practitioner*, January 1881.

VALUE OF SALTS OF AMMONIA, ETC., IN DIABETES.—It has been shown by various authors, according to *Berlin Klin. Wochensch.*, that salts of ammonia are eliminated by the carnivora and herbivora in the form of urea; and Adam Riewicz has shown that this is the case also in the human subject. On the theoretical ground that salts of ammonia might also diminish the quantity of sugar voided in the urine, the latter investigator proposed to employ them in the treatment of diabetes, and published several cases in which they seemed to have this action. Dr P. Guttman, physician to the Baraken-Lazarette, Berlin, tried this method of treatment in a diabetic patient, with the following result:—During the first five days, in which no medicine was given, the average amount of sugar excreted per day was 231·65 grams; during the succeeding thirty-one days, in which ammoniacal salts were given freely, it was 223·11 grams per day; while during the immediately subsequent period of thirty-one days, in which no medicinal treatment was pursued, it fell to 173·19 grams per day. These figures tend to show that the salts of ammonia not only do not lessen the excretion of sugar, but perhaps even augment it. The same case, also, was afterwards treated by the Carlsbad water (Mühlbrunnen), and carefully observed for thirty days, with the result that the loss of sugar was not in the least diminished, but rather increased.—*Medical Press and Circular*, December 22, 1880.

PERISCOPE OF OTOLOGY.

By Dr Kirk Duncanson, Surgeon to the Ear Dispensary, 6 Cambridge Street; Assistant-Surgeon, Eye Infirmary; Lecturer on Diseases of the Ear, Edinburgh School of Medicine.

Round-Celled Sarcoma of the Tympanum.—Hartmann describes a case which, from its great rarity, should be noticed. A boy three and one-half years old, healthy, and of healthy parents, without previous pain or inflammatory symptoms, had a serous discharge from the right meatus, and two weeks later the meatus contained a tumour which was supposed to be an ordinary polypus. On removing this with the snare, four weeks from the beginning of the discharge, the deeper part of the external auditory meatus was filled with other similar growths resembling granulation tissue, springing from all the deeper parts of the external meatus and tympanum; the drum membrane and ossicles had been destroyed. Proliferation from the remnants of the growths occurred very rapidly. The parotid, the mastoid, and infrauricular regions became swollen, suppurated, and were opened; but other tumours formed about the ear, till at the end of five months a tumour the size of a goose egg had developed about the auricle, and there was a marked prominence in the right side of the fauces. At the end of six months the patient succumbed on the appearance of convulsions and coma. The upper and posterior walls of the external auditory meatus, the roof of the tympanum, and part of the squamous bone had been destroyed by the tumour, which consisted of several lobes, and measured 14 cm. in length, 12 cm. in breadth, and 9 cm. in height. Through the opening in the bone the tumour projected into the cranial cavity 1·5 cm. The mastoid was filled with the growth, but the labyrinth was healthy; all the ossicles had disappeared except the stapes, which was imbedded in the mass of the tumour. From the fact that sarcomatous tumours spring from connective tissue, Hartmann considers that this probably originated in the submucosa of the tympanum. Microscopically it belonged to the soft sarcomas, which are of rapid growth, and soon terminate fatally.—*Archives of Otology*, March 1880.

AFFECTIONS OF THE EAR IN TYPHUS FEVER.—Hartmann gives the results of his examinations of the ears in typhus fever cases taken during an epidemic of that disease in Berlin in 1869, the examinations being made during convalescence. In 15 per cent. death ensued during the febrile stage, and these cases are not included in the tables, although examinations were made in them enough to show that the affections of the ear were the same in the severe cases as in the milder ones:—

Patients examined,	130
„ with disease of the ear,	42

The diseases were as follows:—

Impacted cerumen in ext. aud. meat.,	6
Intumescence of Eustachian tube with catarrh of the tympanum,	14
Acute otitis media without perforation,	4
Acute otitis media with perforation: both ears in 3, one ear in 6, of which 2 showed mastoid periostitis, and 1 periostitis with granulations of the meatus,	9
Increase of noises and deafness which had existed previously,	3
Recurrence of previous otorrhea,	1
Noises without abnormal condition,	2
Affection of labyrinth,	3
	42

—*Archives of Otology*, March 1880; by J. Orne Green, M.D., in the *Boston Medical and Surgical Journal*, 24th June 1880, p. 611, vol. cii. No. 26.

KELOID OF THE EXTREMITY OF THE EAR.—The case is described by Santesson and Axel Key in the *Hygeia* for 1879 (*Nordiskt Medicin Arkiv*, Band xii.) The new growths had arisen from the scars of perforations made for the introduction of ear-rings. Since 1859 they had been several times extirpated, but had as often returned—in all eight times within twenty years. The tumour in the right was now extirpated, and its structure is described. It was of a roundish oval form, 3·6 centimètres (1·4 inch) in breadth, 4 centimètres (1·56 inch) in length, and nearly 1 centimètre in thickness. It projected in a round form from above the surrounding skin, from which it was sharply defined. It was everywhere hard, firm, and elastic, and presented on section the appearance of firm connective tissue, with a gray-white surface, traversed by a network of whitish fibres. The edges of the tumour passed beneath the apparently healthy surrounding skin. On microscopic examination the surface was found to be covered with a thick layer of epithelium, and the tumour itself was formed throughout of connective tissue arranged in the same manner as in normal skin. Nowhere were there any embryonic connective tissue, nor any indication of a sarcomatous structure. On the ground of its structure, therefore, the tumour must be regarded as a fibromatous growth; but as it presented, with certain modifications, a cutaneous type, Dr Key terms it "fibroma cutis dermoides," in order to distinguish it from other fibromata of the skin; and he considers the swelling as having arisen from a peculiar traumatic hypertrophy or hyperplasia of the normal skin. That the tumour, notwithstanding its numerous relapses, continuously presented so purely a cutaneous structure without degeneration in any direction seems to Dr Key to be of special interest.—*Brit. Med. Jour.*, 20th November 1880, page 808.

ANTISEPTIC TREATMENT OF SUPPURATION OF THE MIDDLE EAR. —Perfect disinfection of the whole wounded surface, and complete closure from the air, which are the two chief conditions of our effective antiseptic dressing, seem at first sight to forbid the application of these principles to diseases of the tympanum, for it is impossible either to close the Eustachian tube hermetically or to disinfect all the irregularities of the tympanum and mastoid thoroughly. Surgery, however, Bezold says, has these same conditions to deal with in the neighbourhood of the mouth and nose, around the genitals and the anus, and yet experience shows that in these parts an incomplete antiseptic dressing is of value. Disinfection by syringing with solutions of permanganate of potash and carbolic acid has been in use for a long time; and Von Tröltsch has recommended that the external auditory meatus be clothed with charpie saturated with carbolic or salicylic acid, in order to prevent the deposit of new spores after the inflamed surface has been thoroughly cleansed. In selecting an antiseptic for the ear, it is necessary that it should not be irritating to the mucous membrane of the tympanum, and also that it should not form deposits either by itself or by chemical union with the natural secretions, as such deposits often act as mechanical irritants. Carbolic acid, although useful in one-half to one per cent. solution for cleansing in cases of caries or necrosis, is not well borne, according to Bezold, by the tympanic mucous membrane in uncomplicated purulent otitis media, for, from its use in such cases, the mucosa becomes more swollen and the secretion is increased. In chronic suppuration of the tympanum Bezold found the use of salicylic acid, especially in alcoholic solution, useful, but the same is not well borne in acute cases. Thymol acid, he says, is also non-irritating, but his experience of it was slight, and he does not speak of results. After experimenting with all of these, however, with more or less success, Bezold has given them up since learning the virtues of boracic acid, which he considers equal to any of the other substances as an antiseptic, and it has the advantage over them of producing no reaction of the tympanic mucous membrane. Boracic acid has been long in use in Sweden as a secret remedy, under the name of aseptin, but was first brought into notice by Lister in 1875, since which time it has been very extensively used in the clinic of Professor Kussbaum, and found to give equally good results as carbolic acid. After first trying a saturated solution of the acid, and getting no better effect than from similar solutions of the other antiseptics, Bezold tried filling the meatus with finely pulverized boracic acid, and, as the result, he asserts that this method of treatment is so much more certain and so much quicker than other methods, that he now uses it in every case of suppuration either of the meatus or tympanum, and also after lesser operations, such as the removal of polypoid granulations, cauterizations, and paracentesis. With caries of the bone it is not as effectual as in the uncomplicated cases, which would be expected. He does not consider that it supplants, but rather assists, other methods of treatment, like the antiseptic dressing in surgery. Cauterization of granulations, removal of polypi, etc., are as necessary as ever. The meatus and tympanum are first carefully cleansed with a four per cent. solution of the acid, then dried thoroughly, and finely pulverized boracic acid blown in over the suppurating surface. The meatus is then closed with salicylic, carbolic, or boracic cotton, which should be renewed as often as it becomes moist from the discharge. Statistics are given to show the favourable action of this treatment upon twenty-nine cases of otitis media purulenta acuta. The average duration of the otorrhœa in these was only thirteen days. Of 116 cases of otitis media purulenta chronica, the average duration of treatment to the cessation of all discharge was nineteen days. The pulverized acid has the advantage of producing no reaction on the mucous membrane, which keeps a concentrated solution in contact with the inflamed surface, and of not forming coagulations with the secretions. In cases of otorrhœa complicated by phthisis of the lungs, Bezold found that the acid had no effect upon the discharge. Since the appearance of Bezold's paper boracic acid is highly spoken of by Bückner for the conditions described in the original paper, and also as a local application for eczema. The experience of Dr J. Orne Green, who has used Bezold's treatment very extensively for the last year, is also extremely favourable. In a short article by Dr Atkinson in the *Practitioner* for April 1880 attention is called to the use of boracic acid as a local application in diphtheria and as an internal remedy. He also quotes from Drs Cossar Stuart and Malcolm Simpson to show its action upon disease-germs. Pieces of membrane (diphtheritic) which had been brushed with a saturated solution of boracic, when placed on the warm stage of the microscope, showed the characteristic bacilli, but these were absolutely innocuous, and instead of lengthening into spore-bearing filaments, micrococci, bacterium, termo or torula appeared in their stead."—Dr Friedrich Bezold, Privat docent in Munich; *Archiv für Ohrenheilkunde*, vol. xv. 1, 1880; J. Orne Green, M.D., *Bost. Med. and Surg. Jour.*

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. Allan Jamieson, M.D., F.R.C.P., Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

Pityriasis Maculata and Circinata. — Under this name Duhring relates six out of ten cases observed by him of a disease hitherto, so far as he can discover, unnoticed in England, Germany, or America, though met with in France. From a comparison of these cases, the features may be described as follows:—Rather suddenly, either without subjective sensations or accompanied by some degree of burning and itching, reddish, flat maculo-papules make their appearance, usually first on the trunk, then on the limbs, never, in the examples recorded, on the face or scalp. These extend and become more numerous; at the same time they run together, become confluent, or more commonly remain discrete. Sometimes, from healing in the centre, they assume an annular form, either with a clear centre or one slightly fawn-coloured and desquamating. In some cases the eruption much resembles tinea versicolor, in others certain forms of papular eczema, where the lesions are flat rather than acuminated. Desquamation is not always present, and, when so, is slight in degree, in a measure resembling that seen in tinea tonsurans when affecting non-hairy parts. In all the instances careful search was made for fungus elements, but none were discovered. Nor does the disease seem to have shown any tendency to spread by contagion. All the persons affected were adults. Two perspired very copiously, which might account for absence of scaliness in them. The disease seemed uninfluenced by treatment, but tended slowly to disappear, leaving for a time some dusky pigmentation. It was quite superficial, and did not seem to originate about the hair follicles or glands. The average duration of the cases was about two months. Apparently the same disease has been described, though not so fully, by Bazin who named it as Duhring, by Hardy, but particularly by Horand, whose account of it most closely agrees with that given by Duhring. The communication is interesting, as attracting attention to a disease of the skin which has eluded general observation.—*American Journal of Medical Sciences*, Oct. 1880.

Herpes Tonsurans Versiculosus appearing in Three Concentric Rings.—Unna of Hamburg reports a case of this, brought under his notice by Michael. He refers to the opinion of Manson, that in the multiplicity of the rings lies the important distinction between tinea imbricata and tinea circinata. The patient was a girl aged 11, in poor circumstances. Shortly before her mother had suffered from a scaly disease of the scalp, with defluvium capillitii. One ring appeared on the girl's back, and as it grew larger a second arose from the same central point, and finally a third. The appearance of the rings was uniform, all at an equal

stage of development. They consisted of slight elevations about three mm. broad, which bore dry, whitish scales on a slightly reddened base, with a few vesicles at the extreme margin. The space between each elevation was tolerably uniform, about four mm. Unna thinks that the perfection of the rings was due to the thickness and comparative want of sensitiveness of the skin of the back, the difficulty of scratching, and neglect. The scales contained mycelium and spores. (With reference to this case it may be mentioned that Mr Wilson, in his Atlas of portraits of diseases of the skin, figures a number of examples of this, for the sake of convenience, on one plate. He calls it lichen annulatus solitarius, notes its origin from ringworm, the formation of concentric rings, and one other curious point, that he only found one series of circles on each patient; hence the term "solitarius." In Unna's case there seems also to have been only one patch. The illustration given by Unna closely resembles Wilson's, but is totally unlike that appended to Dr M'Call Anderson's interesting sketch of tinea imbricata in last September's number of this Journal.—W. A. J.) *Viertelj. für Dermatologie und Syphilis*, 2 und 3 Heft, 1880.

PITYRIASIS VERSICOLOR IN RINGS AND ON THE FACE.—Towards the end of 1879 there was an unusual prevalence of parasitic diseases of the skin in Hamburg. Tinea tonsurans and pityriasis versicolor, in particular, were abundant. Eczema marginatum and pityriasis versicolor, previously limited, became universal. Many old uncomplicated cases of pruritus ani or scroti altered their aspect and became parasitic. The cases of impetigo contagiosa were more numerous than usual. Pityriasis versicolor appeared as rings, which enlarged and coalesced. A cigar-maker showed himself to Unna with nearly the whole trunk and arms covered with pityriasis versicolor. He complained also of itchiness in the beard, which was closely cut, and between the hairs were confluent patches of the disease. The hairs were quite sound.—*Viertelj. für Dermatologie und Syphilis*, 2 und 3 Heft, 1880.

MULTIPLE KELOID.—After reviewing the opinions which are held as to the nature of keloid, Schwimmer of Buda-Pesth points out that some forms seem to ally themselves more with fibroma, in which the connective tissue elements predominate, others with sarcoma, where the cell elements and the tendency to recurrence after extirpation are more pronounced. He then relates two cases where the number of individual new growths was unusually great. The first of those was that of an otherwise healthy and strong woman, aged 35, on whose body 105 separate tumours were present. Many of these were distinct, well-defined outgrowths; others had feelers or processes extending from them into the surrounding skin. The disease had appeared six years previously, had developed slowly, and for six months before she came under observation no new growths had made their appearance. The number of the tumours and their somewhat dusky red colour had led some medical men whom she had consulted into an error in diagnosis, in consequence of which she had been subjected to anti-syphilitic treatment. No explanation of their causation was discovered. The tumours were only moderately painful on firm pressure, but were not spontaneously painful. The second case occurred in a strongly-built girl of 17. Six months before she had suffered from a very severe attack of measles (?), shortly after the disappearance of which macules developed themselves on the trunk, and these grew into tubercles. The keloid growths were scattered over the breast and back, and were neither remarkably tender nor painful. The condition of the skin in general was singular. Numerous comedones were present on the face, while on the neck, abdomen, and trunk generally, where free from keloid tumours, were many scattered white, flat, cicatrix-like marks. In this case the growths recurred rapidly when scraped out or destroyed with a ten per cent. pyrogallic acid ointment. Even when extirpated bodily along with the subcutaneous areolar tissue down to the fascia of the muscles, and the margins of the wound burned with the thermo-cautery, symptoms of their reappearance were seen at the margins of the resulting scar. Dr Babesin examined the tumours microscopically, and is forced to admit that it cannot always by this means be determined whether a given keloid is cicatricial or idiopathic.—*Viertelj. für Dermatologie und Syphilis*, 2 und 3 Heft, 1880.

RED SWEATING IN THE AXILLA, ACCOMPANIED BY A PECULIAR FUNGOID GROWTH ON THE HAIR.—A physician observed for some time that the hairs in his axilla became matted together, that they were covered with a glutinous substance, and that his shirt was stained light red by the axillary perspiration. Axel Key, on examination, found the hairs glued together, and many covered with a yellow, honey-like layer. This layer occupied the free extremity of the hair, and formed there partly isolated, partly confluent bulgings, partly pearl-like beads or united masses surrounding the hair. There was no alteration in the skin. The microscope disclosed a peculiar fungoid vegetation, amber-coloured by transmitted light. The vegetation in its earliest stage exhibited itself as thin, small plates of a pale yellow colour; soon minute homogeneous elevations appeared, which contained many glancing spores. The vegetation pierced through the outer layers of the epidermis of the hair, and caused it to appear roughened. Here and there the fungus was found to have penetrated into the medulla of the hair. Key could not make out any mycelium. He could not meet with any similar case described in literature. Only Buhl (*Zeitschrift f. Nat. Med.*, R. 3, Bd. 16, S. 357, 1863) described a new hair fungus, which he named Zoogloea capillorum, and which resembled that described above.—Axel Key, condensed in Virchow und Hirsch, *Jahresbericht über die Leistungen und Fortschritte in der Gesammten Medicin*, xiv. Jahrgang, ii. Bd.

PERISCOPE OF OPHTHALMOLOGY.

By George A. Berry.

Thrombosis of the Central Vein of the Retina.—An interesting paper on this subject is published by Angelucci in the last number of the *Annali di Ottalmologia.* The author has had the opportunity, in four different cases, of verifying by post-mortem examination the existence of the thrombosis which had been observed during life. Three of the cases occurred in young individuals affected with valvular disease of the heart, the fourth in an old man of 78, with marked atheromatosis and senile gangrene of the right foot. The microscopic examination of the first cases showed that the vessels were in many places in a condition of phlebitis, and to this cause the author ascribes the thrombosis. In the case of the veins of the old man this appearance was entirely absent, and here it is suggested that the thrombosis was due to the excessive feebleness of the circulation. The two forms of thrombosis to be distinguished are, therefore, the phlebitic and the marastic. In two of the cases belonging to the first category, in which death took place two and four months after the occurrence of the thrombosis, there was no trace of canalization of the clot. This is accounted for by the fact of the collateral circulation being so good. This also explains the absence of œdema of the papilla in these cases. According to Michel, hæmorrhages are found in the marastic form; in the author's case they were not present. This, it is suggested, was probably owing to the incompleteness of the blocking of the vein. Vision is always suddenly either entirely lost or enormously impaired on the occurrence of the thrombosis. The degree of impairment indicates whether the thrombosis is complete or not. Vision does not return after the re-establishment of the circulation. Angelucci believes that several cases diagnosed as embolism of the central artery may have been thrombosis of the vein. The differential diagnosis of the two conditions, which, of course, produce the same subjective symptoms, is given as follows:—*Embolism of Central Artery.*—Normal course of vessels; arteries filiform; veins gradually increasing in calibre towards periphery; no venous pulsation; absence of retinal hæmorrhages. *Thrombosis of Central Vein.*—Tortuosity of vessels; arteries of normal calibre, or nearly so; veins gorged with blood, and interrupted here and there; venous pulsation; retinal hæmorrhages. The existence of apoplexy of the optic nerve, as described by Magnus, is called in question.

Archives d'Ophthalmologie.—The above is the title of a new French ophthalmological periodical under the joint editorship of Messrs Panas, Landolt, and Poncet. Six parts are to appear annually, at equal intervals. The first number, for November-December 1880, contains the following papers amongst others:—"Paralysis of the Oculo-Motor Nerve from Injuries to the Cranium," by Panas;

"A New Blepharoplastic Operation," by Landolt; an important paper on "Pterygium," by Poncet; "The Senses of Light and Colour," by Charpentier; "Studies in Physiological Optics," by Badal; "Treatment of Detached Retina," by Dianoux; besides which there is a tolerably complete bibliography for the first half of the present year. Hitherto France has been without a really first-rate periodical devoted entirely to ophthalmology. The first part of the *Archives* promises well, and will, we trust, meet with a success equal to that of the Belgian *Annales*.

UNUSUAL FORMS OF NYSTAGMUS.—Unilateral nystagmus appears to be rare, and in all cases hitherto published has either been vertical or rotatory. Reuss (*Centralblatt f. Augenh.*, November) describes the following case:—A girl of 7, with intense corneal nebulæ, especially of the left eye, has slight convergent strabismus, left, when reading. In this eye there is at the same time a tolerably rapid *horizontal* nystagmus, which is increased on looking upwards and to the left, and diminished in rapidity, sometimes ceasing altogether, on looking downwards and to the right. The oscillation may occasionally be caused to cease by covering the right eye, but continues if the left be excluded and the right alone used. The right remains at rest under all conditions. Another case is recorded in which, with retinitis pigmentosa and slight divergence of the right eye, a different form of nystagmus existed in the two eyes. In the right the oscillation was horizontal and rapid, in the left rotatory and slow. Looking to the right increased the rapidity of the nystagmus in both eyes, whilst on looking to the left there was a marked diminution in the rate of oscillation of the right eye, and the movements in the left altogether ceased. Reuss has found tenotomy of the internal recti influence nystagmus in two cases. In one the movements wholly ceased, and never returned; in the other they remained absent for eight days, and then reappeared with their former intensity.

LOCALIZING OF PARTICLES OF IRON IN THE EYE.—Dr Pooley of New York finds (*Archiv. f. Augenh.*, vol. x. p. 9) that important indications as to the position of pieces of iron lodged in the eye are to be obtained by the aid of a magnetic needle. The piece of iron is first rendered magnetic by bringing a permanent or electro-magnet into the neighbourhood of the eye. Eleven experiments were performed with pigs' and sheep's eyes removed after death, into which pieces of iron had been introduced, and three on the eyes of living rabbits; and in all cases the metal was found at the spot indicated by the needle. In one case the method was employed clinically with success. The author believes that by this means it may be possible, by cutting down on the spot indicated, to save some eyes which would otherwise be lost. This method is also referred to favourably by Knapp.

OPERATION FOR CENTRAL CATARACT.—Rampoldi (*Annali di Ottalmologia*) recommends the excision of a small portion of the pupillary margin of the iris, leaving the periphery intact, in cases where the central opacity in the lens is stationary, and where vision is improved by dilatation of the pupil. The operation had been performed in three cases with great success in Quaglino's clinic, and is considered preferable to iridectomy, and in many cases to extraction or discision. It is suggested that it might also be a more satisfactory method than that of iridectomy of treating some cases of nebula of the cornea. There is no danger of prolapse of the iris if eserine be used energetically immediately after the operation. The operation is by no means novel.

TOTAL SYMPBLEPHARON OF UPPER AND LOWER EYELIDS OF BOTH EYES.—A remarkable case of this nature occurred in the practice of Dr Keyer of Philadelphia (*Klin. Monatsblätter*, November 1880). The patient, a man 43 years of age, had suffered from inflammation of the conjunctiva, probably membranous, eighteen months before applying for advice. Shortly after the beginning of the conjunctivitis he was confined to bed for seven weeks with inflammation of the lungs. During this serious illness the condition of the eye does not seem to have received any attention, and the patient lay for a long time with his eyes closed, the result being that the lids of both eyes became adherent to the eyes, and the patient was only able to distinguish light from darkness, and had to be led about the streets. As the membrane growing to the cornea was somewhat flaccid, and admitted of stretching, an operation was decided upon, and by carefully tearing and dissecting it off the corner of the left eye, this was left totally clear, so that the iris could be distinctly seen. For long, however, the patient was unable to close his eye. At present, two years after the operation, he has thoroughly regained the power over his lids, and can count fingers at 10′ and get about everywhere alone. The right eye does not appear to have been operated on. This case is probably unique.

Part Fifth.

MEDICAL NEWS.

COLCHESTER IDIOT ASYLUM.—We are informed that there are two points of difference between the Earlswood and Colchester asylums, which are held to account for the greater average mortality in the latter than in the former asylum, viz., that only hopeful cases are admitted upon the Earlswood election-list, and the age must not exceed 16 years, whereas at Colchester hopeless as well as hopeful cases are eligible, and at all ages.

BURROUGHS, WELLCOME, & Co., chemists, London, have sent us specimens of some of their recent preparations, including "Beef and Iron Wine," "Fellows' Compound Syrup of the Hypophosphites," "The Kepler Improved Malt Extract," "Wyeth's Dialysed Iron," "Wyeth's Peptonic Tablets," "Wyeth's Chlorate of Potash and Chloride of Ammonia Tablets." These "tablets" are certainly very pretty objects to look at, but this is their chief recommendation. The other preparations are excellent, and we have much pleasure in recommending them to the notice of the profession. There has also been sent a specimen of "Lawton's Absorbent Cotton," which we recommend to the favourable consideration of surgeons and gynæcologists.

OBITUARY.

DR ANDREW WOOD.

Just on going to press we have with much regret to record the sudden death of this eminent man, well known to all our readers as occupying a high position in the medical world, both as physician, man of letters, and medical legislator. We hope to lay before our readers a more extended notice of his life and character in our next number.

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J. E. Burton, L.R.C.P.,—Handbook of Midwifery for Midwives. J. & A. Churchill, Lond., 1880.

R. E. Carrington, M.D.,—Manual of Dissections of the Human Body. George Bell & Sons, Lond., 1881.

A. H. Carter, M.D.,—Elements of Practical Medicine. H. K. Lewis, Lond., 1880.

John Cleland, M.D., F.R.S.,—Evolution, Expression, and Sensation. James Maclehose, Glasgow, 1881.

Walter J. Coulson, F.R.C.S.,—Diseases of the Bladder and Prostate Gland. J. & A. Churchill, Lond., 1881.

D. H. Cullimore,—Consumption as a Contagious Disease. Baillière, Tindall, & Cox, Lond., 1880.

Surgeon-General J. M. Cuningham, M.D.,—Report on the Cholera Epidemic of 1879 in Northern India.

Charles Denison, A.M., M.D.,—Rocky Mountain Health Resorts. Houghton, Mifflin, & Co., Boston, 1881.

J. Milner Fothergill, M.D.,—Food for the Invalid, etc. Macmillan & Co., Lond., 1880.

A. L. Galabin, M.A., M.D.,—Student's Guide to the Diseases of Women. J. & A. Churchill, Lond., 1881.

R. Harrison, F.R.C.S.,—The Surgical Disorders of the Urinary Organs. J. & A. Churchill, Lond., 1880.

J. Pearson Irvine, M.D.,—Relapse of Typhoid Fever. J. & A. Churchill, Lond., 1880.

E. Klein, M.D., and E. Noble Smith. L.R.C.P.—Atlas of Histology. Part 13. Smith, Elder, & Co., Lond., 1880.

Henry G. Landis, A.M., M.D.,—How to Use the Forceps. E. B. Treat, New York, 1880.

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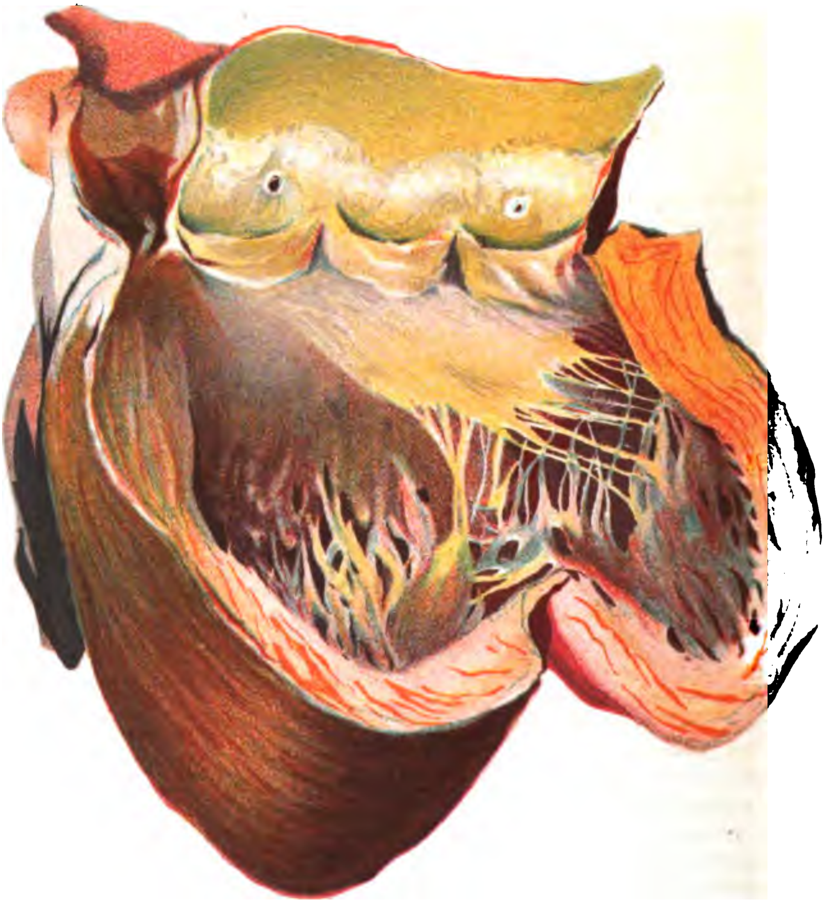

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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Upon Paroxysmal Angina Pectoris and other forms of Cardiac Pain, with some Remarks on the Diagnosis of Fatty Heart.* By GEORGE W. BALFOUR, M.D., F.R.S.E., Physician to the Royal Infirmary, Edinburgh, Consulting Physician to the Royal Hospital for Sick Children, etc.

GENTLEMEN,—Pain in the cardiac region is not only a common symptom in all diseases of the heart, but is often enough complained of when no cardiac disease is present; it is also an important indication of substernal aneurism. Pain below the left mamma is well known to be an almost constant complaint in chlorotic and debilitated—anæmic—individuals, whether male or female; and many neurotic individuals, whose nervous system is developed at the expense of their muscular, who are often said to be gouty, and frequently are so, complain of various uneasy sensations in the cardiac region, often amounting to a positive soreness of the heart. In some cases of infra-mammary pain the pain is occasionally wholly external, a form of intercostal myalgia, only a sign of muscular weakness, and in itself of no serious import. In most, however, the pain is truly cardiac in character, and though, strictly speaking, myalgic also, yet as the debilitated muscle whose action is painful is the central organ of the circulation, it is of much more serious import; it is still perfectly curable, but probably only differs in degree from the suffocative breast pang which has so many sad and fearful memories attached to it. Cardiac pain of this kind is obviously associated with imperfect nutrition, and when this imperfect nutrition is concomitant with an organic cause, the pain is apt to be more permanent and severe; and if to any physical cause of mal-nutrition we have superadded some physical source of obstruction necessitating a more than usually powerful action to overcome it, then we have a strain thrown upon the cardiac muscle which it is physically unfit for and which it resents, or, to speak more correctly, indicates by the pain which attends its action. Hence there are few cases of cardiac disease which in their uncompensated or imperfectly compensated stages are unattended by pain. This pain is more or less constant; it may vary in degree, and it does so vary, but it is seldom absent, and its cessation is a tolerably certain sign that compensation is restored wholly, or, at all events, partially.

We have also a paroxysmal form of cardiac pain which is not associated, or, at all events, not usually recognised as associated with any detectable form of cardiac lesion. In rare instances the victim of this affection is woke up from sleep by the first attack, which, repeatedly recurring, cuts him off in a few hours, as in the case of the late Dr Arnold of Rugby.[1] In most cases the attacks are repeated, and they often last for years, and, with our modern methods of treatment, I believe they are not so likely to be so suddenly fatal as in the case just mentioned. Generally the first attack comes on as the patient is ascending some slight acclivity, or making some trifling exertion, possibly after a meal. He is suddenly pulled up by an excruciating pain shooting through the lower part of his sternum to his back-bone, often accompanied by a constrictive feeling, as if his chest was grasped by a mailed hand; the pain may remain localized, or it may shoot towards the shoulder down the left arm by preference, or down both arms. These are its most usual courses, but it may also occasionally shoot down the abdominal and lumbar nerves. The patient is at once brought to a standstill; he fears even to breathe, but if he chooses to make the effort, he can breathe freely enough; he feels a sensation of impending death, and a ghastly paleness overspreads his countenance. The pulse may intermit, or be feeble or irregular, but it is sometimes—especially if the angina be uncomplicated by any other cardiac disease—quite regular throughout the whole of the paroxysm. After a few seconds the pain ceases as suddenly as it came on, and the patient finds himself as he was, puzzled to know what has happened to him, and terrified at the prospect of a recurrence of the attack. There is in this seizure nothing pulmonary; the air enters freely into the lungs if the patient has the courage to breathe, and full inflation of the lungs has no influence upon the attack. It has no apparent connexion with cardiac or spasmodic asthma, neither does it arise from cardiac strain, or at least from any immediate and recognisable cause of strain. At first it seems to originate in some trifling exertion, or in some emotional excitement of the heart's action, but presently not even these exciting causes are necessary, and now and then, as we have seen, even the primary attack is without any such provocative, the patient waking from sleep in a paroxysm of anginous pain. In most cases it is not till after several and often numerous attacks, brought on by trifling exertions, that the disease arrives at such a pitch as to occur when the patient is asleep or at perfect rest, but sooner or later it reaches this stage.

Neither excruciating nor commanding are words strong enough to express the character of the pain in this affection; it seems to be something appalling, it unnerves the strongest mind, and death itself seems preferable to the repetition of a similar seizure.

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[1] Latham on *Diseases of the Heart*, 1846, vol. ii. p. 373.

Should death be the result of such an attack, the heart is found loose, flabby, and uncontracted—not exactly the condition in which one would expect to find it were death due to spasm, as is supposed by Latham, Heberden, and the older writers, but very much as it ought to be were death due to inhibitory paralysis, as Parry, Stokes, and Walshe[1] usually suppose. And the history of the mode of death in this disease corresponds thereto, for in such cases death is not usually instantaneous, as would be the result of a suddenly fatal spasm of the heart, but commonly occurs from a gradual sinking of the aortic pressure, the result of an equally gradual diminution of the heart's force, the pulse getting feebler by degrees until it ceases, and never passing at once from its ordinary force to a full stop, as would be the case in sudden cardiac spasm. Moreover, the pathology of angina pectoris as a neuralgia of the cardiac nerves is in accordance with this view of the cause of death, for we know that any sudden and violent pain produces sickness, faintness, and depression of the heart's action; and we also know that whatever produces depression of function in the fibres coming from the posterior root of a spinal nerve, and as its result pain or neuralgia, produces also depression of function of the motor fibres coming from the anterior root of the same nerve, and as its result subparalysis of the parts to which they are distributed.[2] Hence we have in angina pectoris two distinct sources of depression of the cardiac action: first, we have the directly depressing influence of a pain, the most acute and severe which the human frame can experience; and second, we have the action on the cardiac motor ganglia of the same cause which, acting on the sensitive nerves, gives rise to this excruciating agony, and we cannot but suppose that as a rule the functional depression of the motor nerves is not much less than that of the sensitive ones, that is, that the subparalysis of motion must bear some proportionate relation to the acuteness of the pain, which is the index of the functional depression of the nerves of sensation. This, however, is a rule to which there must be some exceptions; even in strictly spinal nerves the pain is often very much greater than the subparalysis, and there are many cases of angina in which the pain recurs at intervals for years in a most excruciating form without producing a fatal result; still the analogy is a fair one, and to some extent must hold good. And there are many things in pathology which enable us to understand that a depressing cause may at one time act with greater intensity on the sensitive fibres, at another on the motor fibres, and at still another upon both alike. Take for instance an attack of peritonitis; the action on the heart in such a case is wonderfully analogous to that of angina pectoris, yet in one case we may have excruciating agony and but little depression of the heart's action, in another the agony and cardiac depression may proceed *pari passu*, and in still a third case we may have no pain at all, and yet the cardiac depression may prove rapidly fatal.

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[1] Anstie seems also to lean to this view, *vide Neuralgia and its Counterfeits*, London, 1871, p. 73. Dr Moinet likewise adopts the idea of paralysis in contradistinction to spasm, *vide Treatise on the Causes of Heart Disease*, 1872, p. 102. Eichwald, "Ueber das wesen der Stenokardie," etc., Wurzburger *Medizinische Zeitschrift*, IV. Bd. 4 heft., 1863, gives a good historical *résumé*, and regards angina as very often a reflex neurosis which is fatal by arrest of the heart in diastole.

[2] Anstie, *op. cit.*, p. 6; Van der Kolk *On the Spinal Cord*, etc., New Syd. Soc. Trans., 1859, p. 7.

We must never forget that angina is sometimes feigned, and is occasionally of a purely hysterical character. Mrs Chisholm, whose case was formerly commented on,[1] was an instance of the former character, and a very clever imposter she was, giving a great deal of trouble before she was detected. Last winter we had in the case of the girl L.[2] a well-marked example of the hysterical variety. L. suffered from aortic regurgitation, from which she subsequently died, and the true character of her attacks was not at first suspected; but happening to find her in the fit at visit one day, I at once recognised its hysterical character, and took measures to prevent its recurrence, which were happily successful. I have seen several other cases of hysterical angina, but none so well marked as this, and, let me add, never any one in which there was less cause for suspecting hysteria, or more apparent reason for believing the paroxysms to be real.

We must never forget that pain in the heart, however caused, is, if not angina, at least very closely allied to it. The infra-mammary pain of chlorotic girls is almost invariably associated with pain in the heart itself, neurotic in character and depending on mal-nutrition. So also, in all other forms of spanæmia, pain in the heart, often radiating more or less along the nerves after the fashion of true paroxysmal angina, but less severe in character and more constant—less distinctly paroxysmal—is a very common event. I presume it is cases of this kind, probably of an unusually severe character, that Beau has dignified with the name of angina arising from the abuse of tobacco. The tobacco heart, however, as a rule, is simply a spanæmic heart, weak, irritable, and somewhat dilated, with an auricular murmur and an accentuated pulmonary second. In all spanæmic cases the pain or uneasiness—for it is seldom more than this—is persistent, with occasional exacerbations following exertion, a distended stomach, or some other exciting cause, and it is readily cured by improving the general health. The first step towards this is, of course, the giving up whatever has deteriorated the health, whether that be excess in tobacco, tea,

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[1] Balfour *On Diseases of the Heart and Aorta*, 1876, p. 279.

[2] M. L., admitted to Ward XXXIII. on 28th January 1880; died from sudden asystole, 31st May 1880.

whisky, work, or anything else; and the next, so to regulate the diet, nature and hours of work and of rest, as to promote the due nutrition of the body, to enable it to live within its income, and to accumulate that margin of health which is our only safeguard from a thousand ailments. We can generally aid the attainment of this end by the exhibition of appropriate tonics; these, however, require to be specialized for each case. Along with general remedies, it is often advantageous in such cases to apply sedatives locally to the cutaneous nerves, either by putting a belladonna plaster over the pained part, or by rubbing the side and shoulder with an opiate liniment, and these soothing means are often, in slight cases, attended with such happy results as to lead to the neglect of the central cause. But whenever we find an accentuated pulmonary second, or an auricular murmur, associated with uneasy or painful sensation in the left breast, we must never forget that we have to do with a cardiac lesion which requires special treatment to cure it quickly and well. Between the slighter forms of mere cardiac uneasiness and the distinctly paroxysmal variety attended by severe precordial pain, shooting in various directions, but most commonly up the chest and down one or both arms, and accompanied by an overwhelming sense of impending dissolution and all the signs of serious nervous shock, there are many intermediate grades of severity. And though we might theoretically desire to exclude from the category cases of tumultuous and forcible heartbeat with lancinating pain, as apparently inconsistent with the idea of the subparalytic character of angina, yet this disease may begin in this way. Though I myself would not therefore apply the term angina to cases presenting these symptoms, yet true angina may develop out of them, as the following most interesting case abundantly proves:—

Case I.—A. S., a male, æt. 24, admitted to Ward V. 6th October 1877, complaining of palpitation and pain in the precordial region. The patient stated that he had suffered in this way for fourteen weeks, and that the pain was sometimes a mere uneasiness, and at others more acute. On admission, the patient presented a somewhat anxious expression, and was found to be well nourished, all his organs being healthy with the exception of the heart, which beat rapidly, 120 per minute, and in a somewhat tumultuous manner; the radial pulse was quite regular. On auscultation, the first sound at the apex was impure, the pulmonary second markedly accentuated, and a faint diastolic murmur was audible over the aorta at midsternum. The case was at once recognised as a serious inflammatory affection of the heart or ascending aorta, but whether it was endocarditis, myocarditis, or endarteritis, the symptoms were not distinctive enough to decide. The treatment consisted in the administration of full doses (15 grains) of iodide of potass in a bitter infusion three times a day, with perfect rest in bed, and an unstimulating diet. Under this treatment his heart quieted down, but the pain increased, and became localized as a constant pain in the scrobiculus cordis, unaffected by pressure. This extension of the pain to the epigastrium was at first regarded as due to the iodide; but finding that it recurred in a distinctly paroxysmal manner, and that the pulse became rapid and feeble both during the paroxysm and for some little time after, the diagnosis was at once completed, and the affection stated in all probability to be an acute endarteritis of the cardiac end of the aorta, implicating the openings of the coronary arteries, with consecutive (febrile) dilatation of the heart. At first inhalations of nitrite of amyl gave great relief, the paroxysms lasting from five to fifteen minutes. But in the final attack, which commenced about four o'clock on the morning of the 24th of October, and lasted for about two hours, the amyl was of no use, and the only relief obtained from the intense agony was from chloroform inhalations.

At the autopsy on 25th October the body was found to be well formed and fairly muscular. Rigor mortis and post-mortem lividity well marked. Thorax: about six ounces of clear serum in each pleural sac, and about two ounces of similar fluid in the pericardium. The blood was remarkably fluid. The heart weighed thirteen ounces, the ventricular cavities were slightly dilated, and their walls slightly hypertrophied. The mitral orifice was enlarged, admitting four fingers; cone diameter 1·6. The cusps were natural. The tricuspid orifice was also enlarged, admitting six fingers; cone diameter 1·9. In the wall of the aorta, immediately beyond the aortic cusps, there was a ring of atheromatous thickening which involved the whole circumference of the vessel at and a little beyond the sinuses of Valsalva. In this situation the tunica intima had grown to twice or thrice its natural thickness, and presented a clear, translucent aspect, being only here and there affected with points of fatty degeneration. The openings of the two coronary arteries lay in the midst of this atheromatous area, and were both so extremely contracted as barely to admit the point of an ordinary surgical probe. The aortic valve allowed water to leak through it slightly, but it might be said to be practically competent. The cusps were slightly thickened at their free margins and above the *corpora aurantii*. The muscular substance of the heart was everywhere of good colour and consistence, and on microscopic examination presented no abnormality except the presence of a considerable number of reddish-brown pigment granules in some of the fibres. All the other organs of the body were perfectly healthy, but somewhat congested.[1] In this most interesting and probably unique case you will observe that we have a fatal cardiac lesion coincident with a practically healthy heart. The slight dilatation, slight hypertrophy, and trifling leakage through two orifices were nothing more than we may find in any spanæmic heart, especially when febrile excitement coexists. Similar conditions are to be found in hundreds who make perfectly good recoveries. The fatal lesion was evidently the blocking of the coronaries; this was what was found, and this was precisely the lesion which had been predicted to be the most probable one. This opinion was based on the obviously causal connexion between the acute attack and the angina in this case, and on the fact that in by far the larger number of cases angina seems to depend upon some interference with the blood supply to the walls of the heart itself, and consequently to the intra-cardiac nerves. In a very large experience of angina, including over a dozen cases known to have been fatal, I have never failed to detect indications of defective blood supply to the heart, and in the only three dissections I have had this view has been abundantly confirmed. The case just narrated supports this opinion, as indeed almost all those recorded also do, even the celebrated case of Dr Arnold being no exception. For though his coronary artery—he had but one—was neither diseased nor obstructed, it is stated that, "considering the size of the heart, it appeared to be of small dimensions, and with some difficulty admitted a small director" (Latham); while the thin, soft, flabby texture of the heart sufficiently testified to the inadequacy of its feeding power. That is the true cause of angina; so long as the coronary arteries are able to feed the heart, it matters not what their structure is, we have no angina. Whenever from any cause the blood supply to the heart is insufficient, then we are liable to have angina, and in all such cases we have more or less of it. Pressure on the cardiac nerves in some part of their intra-thoracic course is an occasional cause of angina, but there is every reason to believe that even in this case it is produced by direct or reflex interference with the intra-cardiac circulation. The sequence of events in ordinary cases of angina seems to be, first of all imperfect nutrition of the cardiac muscle, associated with various uneasy or painful sensations, and generally (always?[1]) accompanied by the early physical signs of dilatation, usually with some hypertrophy. Next we have paroxysmal attacks of pain occurring when the heart is called upon for extra exertion, especially when a weak pneumogastric nerve is irritated by a distended stomach. At first these attacks only occur when the patient is debilitated from any cause, and his cardiac power thus temporarily impaired; in these circumstances improvement in health is followed by cessation of the angina, temporarily or permanently. By-and-by, as the nutrition of the heart becomes more impaired, the attacks are more readily brought on; the most trifling excitement of the heart's action, whether induced by exertion or by irritation of the terminal branches of the pneumogastric in the stomach, suffices to induce a paroxysm of pain; and in some cases at last the ordinary action of the heart is painful, aggravated by continually recurring paroxysms of greater severity, which wax and wane in that inscrutable fashion so common in other neuralgias.[1] Death occurs from asystole or rupture, sometimes during an attack, more often, perhaps, during a painless interval.

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[1] Condensed from the Pathological Records of the Edinburgh Royal Infirmary. A chromo-lithograph of this heart is prefixed to this paper.

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[1] I have never seen a case of angina in which these signs were not present. At present I am inclined to lay some stress upon the presence or absence of these signs of cardiac dilatation, as an indication that the angina is purely cardiac in character, or merely dependent upon the existence of substernal aneurism. But my experience, as yet, is insufficient to enable me to assign more than a moderate probability to this assumption.

Such seems to be the history of all ordinary forms of angina. In traumatic angina the case is different. Here we have an individual apparently in the most perfect health, who meets with some trifling accident, and is at once plunged into a series of recurrent paroxysms of the most severe cardiac pain, which ere long terminate in death. The only case of this kind which has occurred to me is the following:—

CASE II.—J. L., a married woman, aged 50, stout, healthy, and who had passed through her life without an ache or a pain except those incident to maternity, slipped and fell on the street in the beginning of January. Being rather heavy, she was considerably shaken, but apparently not otherwise injured. By-and-by, however, anginal paroxysms set in and continued gradually to increase in severity. There was nothing abnormal to be detected about her heart, but she died suddenly in a paroxysm about the middle of March of the same year. Unfortunately I was unable to obtain a post-mortem examination; but from the sudden onset of the angina, its obvious dependence on the fall, and the resemblance of the most prominent symptoms to those of substernal aneurism, there is every reason to believe that the middle coat of the aorta was fissured transversely just above its cardiac origin at the time of the fall, that the angina was caused by pressure on some of the branches of the cardiac plexus by the gradually increasing aneurism thus formed, and that death was caused by this aneurism bursting into the pericardium.

The two cases just narrated have been the only cases in my own experience who have died during a paroxysm, and I am inclined to believe that with improved methods of treatment this will be an increasingly rare mode of death. All the others have died from asystole brought on in various ways during the painless interval. One, after many years' freedom from pain, died quietly after suffering for some time from gradually increasing dropsy and other signs of a dilated heart. Another, who during several years suffered from many comparatively slight attacks of angina, lunched cheerfully with some friends, walked with apparent ease to a railway station but a short distance off, sat down, and died. Others, after suffering more or less intensely at intervals for years, died more or less suddenly without giving any indication of suffering. And one well-known literary man I myself saw die from ingravescent asystole about a week after his last paroxysm. He had for long suffered from angina, with all the signs of a weak, dilated heart due to arterial atherosis, and I had brought him safely through two most severe attacks with a comparatively painless interval of a year between them. Subsequent to the last attack he had been confined to bed with symptoms of pulmonary œdema, which is so common a result of a severe paroxysm. At last, when apparently fairly convalescent, he obtained permission from his medical attendant to rise from bed, and while dressing his weak heart failed and ingravescent asystole set in. There was no pain. When I reached his apartment he said, "Doctor, this is very different from anything I have had before," and he died quietly after drinking about half a glass of brandy given him in the hope of stimulating the heart to more vigorous contraction. The whole act of dying occupied about half an hour. At the post-mortem examination "both coronaries were found atherosed and obstructed, and in the substance of the left ventricle there was an elongated patch of advanced fatty degeneration. The limits of the patch were well defined, and the appearance presented bore a considerable resemblance to that of a hæmorrhagic infarction which had undergone fatty degeneration."[1] The heart itself was somewhat dilated.

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[1] In regard to the periodicity frequently presented by neuralgias depending upon persistent grave organic lesions, *vide* Trousseau's *Clinical Medicine*, New Sydenham Society's edition, vol. l. p. 598.

Of course any deficiency in the blood supply to the cardiac walls must injuriously affect the intra-cardiac motor ganglia, and thus we have the element of danger introduced. When an anginous heart retains a fair amount of reserve power, and the pain is of short duration, the danger may not be great, and, as occasionally happens, especially in cases complicated with aortic regurgitation, the sufferer can sometimes by a voluntary effort call upon this reserve power, flush his heart with blood, and overcome his breast pang. I can recall several such cases; but the experiment is dangerous, and failure is sudden death.[2] If, however, the reserve power is feeble, then the danger is probably commensurate with the severity and duration of the pain, and it is a matter of paramount necessity to relieve this as speedily as possible.

Our forefathers had nothing to trust to but the external application of cutaneous irritants, and the exhibition of stimulants and narcotics by the mouth; a vain hope, when moments are precious, and to the time needful for absorption—twenty minutes in the most favourable circumstances—was superadded the further delay occasioned by a failing circulation. Modern discoveries have changed all this; we can now by inhalation thoroughly narcotize a patient in a few seconds, and by means of hypodermic injection secure in ten minutes a painless unconsciousness which will last for many hours.

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[1] I quote from a letter received from Dr Wyllie, at that time pathologist to the Royal Infirmary, who made the dissection, the full report having been unfortunately lost. The specimen is in the University museum.

[2] Forbes, *Cyclopædia of Practical Medicine*, vol. i. p. 94, also mentions similar cases.

Foremost among all our modern appliances for the relief of this dreadful breast pang we must place the nitrite of amyl; it is perfectly safe, and may be entrusted to the patient with the certainty that he will not injure himself by its use; in all slighter attacks it serves to give perfect relief, and in more severe paroxysms it alleviates even when it cannot completely remove the pain. It flushes the face, quickens the heart-beat, and has been experimentally found to lower the blood-pressure in animals to whom it has been administered. It was originally employed by Dr Lauder Brunton in the treatment of angina, on the supposition that this depends upon increased intra arterial blood-pressure. I quite agree that in all cases of angina the blood-pressure is probably always above the normal, but that it is abnormally increased at the moment of seizure has not yet been proved, and, so far as I know, is incapable of proof. The supposition of Dr Brunton that the case is so rests solely on a single sphygmographic tracing from the radial artery; but a pulse-trace only represents the local movement of the arterial wall, and for many obvious reasons can never be accepted as a correct indication of the intra-arterial blood-pressure. Further, if we accept the face-flushing as a proof of lowering of the blood-pressure, then I am in a position to state that two specimens of nitrite of amyl will flush the face in apparently the same degree, yet only one of these will relieve the pain. The specimen which relieves the pain is one which has been freshly prepared, or which has been kept in a hermetically sealed capsule. The other specimen, which does not relieve pain, has been kept for some time in an ordinary stoppered bottle. I make these statements from a large experience of the use of the nitrite of amyl, and chiefly base them on two cases, both of whom suffered for years from terrible angina. One of these cases had a loud, musical, diastolic aortic murmur, and he never felt well unless his wife could hear this murmur across the dinner-table, a condition indicating, of course, a much greater blood-pressure than when the murmur ceased to be audible and his sufferings began. During the last few years of his life he used many pounds of the nitrite of amyl, having it constantly with him, and inhaling it when required. His face was always fully flushed, and a certain amount of relief obtained, but this relief was only rapid and complete when the specimen employed was perfectly freshly prepared. The second case was somewhat similar. The sufferer was a medical man, and he used to soak his pocket handkerchief in the amyl and go to sleep with it on his face. The conclusion I have arrived at from these facts is, that the relief to the pain of angina is obtained, not from lowering of the blood-pressure, but from the action of a volatile narcotic, which gradually escapes from the amyl when kept, unless it is enclosed in hermetically sealed glass capsules. As these are now readily obtained, we possess a remedy which can be safely entrusted to the patient, and which is certain to give relief in all ordinary attacks.

When the attack is a severe one, the amyl fails to give relief, however freshly it may have been prepared; of this I have been assured by many sufferers, and have myself repeatedly had occasion to observe it. Then our only resource lies in chloroform, which can only exceptionally be entrusted to the patient, but ought always, if possible, to be given by a medical man. It must be given freely, so as completely to narcotize the patient; and, when so given, I myself have not yet seen any case which was not relieved, though I have seen several in which the relief was not permanent enough to place the patient in safety. In these cases I have had recourse to the subcutaneous injection of morphia, using by preference Squire's solution of the bimeconate, of which I have injected half a drachm into each arm, without removing the clothes or in any way disturbing the patient. This, as yet, has never failed me: the chloroform sleep has passed into the morphia sleep, from which the patient has woke up some hours subsequently, free from pain, but exhausted, as we can readily suppose, and usually with some œdema of the lungs. You see, then, that I have no dread of chloroform in these cases, and by no means homologate Anstie's statement, that "the only kind of chloroform inhalation which would be useful in such cases would be that in which a carefully measured small dose of a weakly impregnated atmosphere should be inhaled, and without large experience in the administration of chloroform the practitioner will be unable to secure this effect with certainty; and the effect of a *powerfully* charged atmosphere, breathed only once or twice even, would be instantaneously fatal."[1] You have seldom an opportunity of seeing the usefulness of chloroform in angina pectoris in the wards, but you have all at least occasional opportunities of seeing its beneficial action in other kinds of cardiac pain; and what is safe enough in aortic regurgitation, for instance, cannot be dangerous in angina pectoris. Many years ago I knew an individual who was forbidden to take chloroform on account of a cardiac valvular lesion under which she laboured, and yet for long she secretly indulged in chloroform intoxication without any fatal result. So far from being unsafe in cardiac disease, it is often of the greatest use in these cases; it not only relieves pain, but regulates the circulation, now and then bringing the pulse back to the wrist, whence it had apparently fled for ever. In peritonitis this effect is occasionally quite remarkable.

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[1] *Op. cit.*, p. 80.

I well remember one case of extreme cardiac pain and dyspnœa in a patient almost moribund from cardiac disease, and who did die only a few days subsequently, yet in her the immediate effect of chloroform inhalation was to restore the pulse to her wrist, to enable her to breathe more freely, and in few seconds, instead of being black in the face, pulseless, and gasping partly from pain, and partly from extreme dyspnœa, she became quiet, natural in appearance, and in a short time was able to lie down and rest. But, you may say, in angina the heart is almost universally flabby and fatty; is chloroform not dangerous when we have a fatty heart? The next case which I shall relate will be the best reply to this question. First, let me say that I doubt the possibility of diagnosing a fatty heart. We may suspect its existence, because the physical signs seem to warrant the supposition, while the conditions present are apparently favourable to its development. Thus there may have been a long-persistent spanæmic condition of the blood, or there may be a state of general (pernicious) anæmia, or there may be reasons for suspecting a purely cardiac anæmia from local causes, such as an atherosed and obstructed state of the coronary arteries, or an overgrown hypertrophy of the cardiac muscle which has got beyond the feeding powers of these vessels. For fatty degeneration of the cardiac muscle is the result of mal-nutrition, and seems never to be found apart from one or other of these conditions. But little acquaintance with pathology is, however, requisite to teach us that these conditions are not all of them easily and certainly recognisable, and that even when present fatty degeneration is not an invariable concomitant of any of them. Though, therefore, our suspicions may occasionally be right, they may more often be wrong. The signs of cardiac debility upon which we base our suspicions are much more commonly due to dilatation than to fatty degeneration, in spite of the possible co-existence of an arcus senilis. Besides, there are many cases of actual fatty degeneration in which there have been no faintings, cardiac asthma, feebleness of the pulse or of the cardiac impulse, no yellowness or pastiness of the complexion, and no arcus senilis—in fact, all the symptoms and signs connected with the heart have either been those of perfect health, or at all events they have not been such as are generally supposed to indicate fatty heart, yet the heart has been markedly fatty.[1] I may refer to the case of Bridget Henry, who died from chloroform in the Cincinnati Hospital, U.S., 13th October 1870,[2] as a well-known example of the conjunction of a normal impulse with a fatty heart; but indeed of this we could scarcely have a more striking instance than the case of Mrs Tait, which I will presently relate to you. No doubt the rapid and powerful action of chloroform renders it a very dangerous agent in incautious hands, and some diseased states of the heart, of which an enfeebled and anæmic condition are the chief, render it more sensitive to the action of chloroform, and more liable to be fatally overpowered by an overdose ; but I know of no diseased condition which should deter us from its cautious employment when that is otherwise indicated, as I hold it imperatively to be in certain cases of angina pectoris, for what we desire to do in them can only be done by means of chloroform. I do not say *tuto, cito, et jucunde*, because the superlatives of these adverbs are more applicable than their simple positives. In a disease possessing such a pathological history as angina pectoris, the one great object is to free the cardiac nerves from the depressing influence of pain, which gives rise to that subparalysis in which the danger lies. This we can only do by narcotizing the nerve centres through which this action takes place, and so setting them free from all those influences which tend to depress the heart's action. The immediate result is a sensation of relief from pain, greater force and freedom of the heart's action, and a fuller pulse.[1]

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[1] While this is passing through the press this statement has received a most forcible illustration in the death, from rupture of a fatty heart, of one of our best known and most esteemed medical practitioners, whose healthy appearance and great vigour both of body and mind were entirely opposed to all the more generally received ideas in regard to this form of degeneration.

[2] *Chloroform Deaths*, by W. W. Dawson, M.D., Surgeon to the Cincinnati Hospital, 1871. Printed by Robert Clarke & Co., Cin.

Sulphuric ether has long been used with a similar intent; it is an admirable narcotic, and the chief objection to its use is that it is not rapid enough, taking always some minutes to bring the patient fully under its influence. Chloroform acts more quickly, even more effectually, and is perfectly safe. It is not always necessary for the medical man to administer it, though in some cases it is so. All that we require is to insure that the patient shall only have a moderate dose, and this we manage by giving him a chloroform smelling bottle, the fluid being poured over a piece of sponge, so that it cannot spill; this smelling-bottle he is told to hold to his nose, and to breathe as deeply as possible. In this way relief is obtained in a few seconds, and so soon as the narcotic influence is produced the smelling-bottle drops, and with it rolls away all risk of any overdose. Mrs Tait, long a nurse in this Infirmary, and who died in Ward XIII. on 30th March 1871,[2] was for the last few weeks of her life almost constantly under the influence of morphia or chloroform, or both, the morphia being injected hypodermically as soon as the chloroform narcosis was established, so that its soothing influence might come into play when that of the chloroform passed off. She was over eighty years of age, and had long suffered from angina pectoris, the paroxysms of which were latterly very severe, and with but short intervals between them. She died at last, as I have said, not suddenly, but gradually, worn out by her age and sufferings. After death the aorta was found dilated, the orifice of the middle coronary artery—there were three in her heart—almost entirely blocked up by atheromatous deposit, and her heart not only thin-walled and somewhat dilated, but of a pale yellowish tint, soft, and thoroughly fatty; no muscular fibres could be more completely degenerated; yet chloroform produced in her no dangerous symptoms, and, far from shortening her days, seemed to prolong them. I may also add that her apex beat was tolerably firm to the last.

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[1] In his work on *The Bearings of Chronic Disease of the Heart upon Pregnancy, Parturition, and Childbed*, London, 1878, Dr Macdonald says, *apropos* of a primipara labouring under aortic insufficiency, "The patient looked pale, . . . and complained that she felt ready to faint with every pain." Though besought to give chloroform, he hesitated, but yielded at last, and then found that "under its employment the pulse became stronger and steadier, instead of feebler and more irregular, as I feared it might."—*Vide* p. 147.

[2] Margaret Tait, admitted 3d Jan., died 30th March, 1871.

But however satisfactory our treatment of the paroxysm is, the treatment during the intermission is quite as important, and is often attended by even more striking results. From the pathology of this disease already given you will understand that during the intermission I use every endeavour to improve the patient's general health, and especially to tone up his heart. To this end he must be warned to avoid every source of excitement, to take perfect rest in a mild and equable climate, where he ought to be much in the open air, driving or sitting, but not walking. His diet must be so regulated as to consist of the blandest, most nutritious, and unstimulating foods, avoiding everything likely to prove difficult of digestion or give rise to flatulence, and being particularly careful as to stimulants, the action of which is ultimately to weaken the heart, and the more stimulating such drinks are, and the greater the amount partaken, so much more rapidly is this result attained. Of course the whole system must be carefully attended to, and acid tonics, pepsine, mild laxatives, or any other general remedies given that may seem to be required. But as all secondary functions depend for their perfect discharge very much upon the condition of the great central organ, so our best mode of improving the gastric or hepatic functions will always be to improve the heart. To that end we have as yet only two remedies of any importance: these are arsenic and digitalis. Very shortly after Fowler introduced his tasteless ague drop, arsenic was employed experimentally in a great many diseases, angina pectoris amongst the rest, and in several cases it was found to be successful.[1] Since then it has been often used in such cases. Anstie has declared it to be "an invaluable remedy in cardiac neuralgia," as well as "the most important prophylactic tonic"[2] we can employ in these cases, and my own experience is quite to the same effect. Arsenic is indispensable in all forms of weak heart accompanied by pain. It is useful in all such cases, and in many it is quite successful in putting a stop to angina. Several cases have occurred to me in which arsenic alone has removed angina after a few weeks' treatment, not only temporarily, but permanently. The ordinary dose is from three to five minims twice a day after food, but the dose may sometimes be advantageously pushed till slight physiological symptoms appear, and thereafter continued so long as desired in a dose just short of that needful to produce these effects. Its mode of action is somewhat obscure. Besides being a good general tonic, as well as a special tonic to the heart, it seems also to exercise some modifying influence on the nerves which renders them less liable to pain in spite of a continually advancing degeneration. But however it may act, arsenic is a drug well worthy of confidence in the treatment of angina, and associated with iron and strychnia it forms a combination specially valuable in all cardiac neuroses. One great difficulty in the administration of arsenic lies in its tendency to irritate the bowels of some patients; this may be overcome by the addition of opium, or by the diminution of the dose, for it not infrequently happens that a constitution sensitive to the injurious action of a drug is also sensitive to its curative action. I have frequently found this to be the case with arsenic, and it is always worth remembering. I distinctly remember one gentleman specially sensitive to the action of all drugs, but particularly to that of arsenic, who could not bear it in larger doses than one milligramme of arsenious acid daily (0·015 gr.); two milligrammes gave him discomfort, one was well borne. He was not aware in what the evil effects of the drug consisted, nor did he know what good I expected from its use, yet in about a fortnight he said, "I feel my breathing easier now; my heart is steadier, and I can go upstairs better than for many years." No better results could have been obtained from larger doses, and, indeed, from his sensitiveness, had these been persisted in, the drug would assuredly have had to be entirely given up. From my belief in the connexion between defective nutrition of the heart and cardiac pain you will readily understand that I put considerable faith in the use of digitalis in these cases, in small tonic doses repeated night and morning. Ten minims of the mixture of digitalis, or one granule of Nativelle's digitaline, is an ample dose, and I have seen nothing but good result from the use of this drug. One granule of digitaline night and morning, with arsenic, strychnia, and iron twice a day after food, is a sort of model treatment for such cases; and this treatment, coupled with nourishing, unstimulating food, abundant rest and fresh air in a mild and equable climate, is often attended by the happiest results in those cases susceptible of improvement, which are, in truth, by no means of infrequent occurrence.

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[1] Forbes, *Cyclopædia of Practical Medicine*, vol. i. p. 95.

[2] *Op. cit.*, pp. 78, 79.

ARTICLE II.—*A Statistical Inquiry into the Action of the Bromides in Epilepsy.* By A. HUGHES BENNETT, M.D., Physician to the Hospital for Epilepsy and Paralysis, Regent's Park, and Assistant-Physician to the Westminster Hospital.

(*Continued from page* 712.)

AN important consideration next arises. Assuming that practically the treatment in all cases is alike, are there any special circumstances which explain why some patients should have no attacks while under the influence of the drugs, while others are only relieved; why some—though the number is very small—should receive no benefit, and others have a larger number of attacks after treatment? On a careful examination of all the clinical facts of each case, no explanation can be found, the same form of attack, the same complications and circumstances, occupying each group. For example, one of those who had no attacks during treatment was a woman who had been afflicted with epilepsy for eighteen years of a severe form, with general convulsions, biting tongue, etc. Another was a very delicate, nervous woman, who suffered, in addition to the seizures, from pulmonary and laryngeal phthisis, who came of a family impregnated with epilepsy, and whose intellect was greatly impaired. By far the largest class are those benefited by treatment, and these comprehend every species of case, chronic and recent, complicated, inherited, in the old and young, and so on; yet the most careful analysis fails to discover why some should be more amenable to treatment than others, or give any indication which might be useful in prognosis. Neither does a study of the few cases which the bromides did not affect, or those which increased in severity under their influence, throw any light upon the subject, as some of these latter gave no indications beforehand of their unfortunate termination, and in none of them was there any serious complication or special departure from good mental or bodily health.

Another point must be noted, although there is no statistical method of demonstrating the fact, namely, that in those cases in which the attacks were not completely arrested, but only diminished in number, those seizures which remained were frequently greatly modified in character while the patient was under the influence of the bromides. These were less severe, and characterized by the patients as "slight," while formerly they were "strong." This by itself often proves of great service, as, instead of a severe convulsive fit, in which the patient severely injures himself, bites his tongue, etc., he has what he calls a "sensation," in other words, an abortive attack.

Having considered the general effects of the bromides on a series of unselected cases, we now proceed to investigate whether any particular form of the disease, or any special circumstances connected with the patient or his surroundings, have any influence in modifying the results of treatment. The following table shows epilepsy divided into its two chief forms, namely, E. Gravior and E. Mitior. By the former is understood the ordinary severe attack, with loss of consciousness and convulsions; the latter is the slighter and very temporary seizure, of loss of consciousness, but without convulsions.

TABLE V.—*Showing Results of Treatment by the Bromides in—* 1. *Epilepsia Gravior; and* 2. *Epilepsia Mitior.*

No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.	No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.
			1. *Epilepsia Gravior.*				
1	600	5	—	25	4	1	—
2	450	12	—	26	4	2	—
3	249	90	—	27	2	—	1
4	180	60	—	28	2	—	1
5	120	3	—	29	2	—	1
6	60	1	—	30	2	—	1
7	60	6	—	31	2	—	2
8	30	—	8	32	2	—	2
9	30	4	—	33	1	0	0
10	30	12	—	34	1	0	0
11	23	1	—	35	1	0	0
12	16	2	—	36	1	0	0
13	12	—	4	37	1	0	0
14	12	3	—	38	1	0	0
15	12	10	—	39	1	—	1
16	8	0	0	40	1	—	1
17	8	—	4	41	1	—	1
18	8	1	—	42	1	—	1
19	8	4	—	43	1	—	2
20	8	2	—	44	1	—	4
21	6	—	1	45	1	—	2
22	5	—	5	46	1	1	—
23	5	0	0	47	1	150	—
24	4	—	2				
			2. *Epilepsia Mitior.*				
1	900	60	—	10	60	90	—
2	600	60	—	11	13	—	2
3	300	3	—	12	16	—	4
4	150	1	—	13	16	—	8
5	150	7	—	14	8	—	3
6	120	120	—	15	8	—	3
7	90	9	—	16	4	—	1
8	90	3	—	17	4	6	—
9	60	15	—	18	1	0	4

Of 47 cases of E. Major, we find that in 8 there were no attacks during the whole period of treatment, in 1 there was no improvement, in 1 the attacks were augmented after treatment, and in 37 there was marked and varying diminution of the seizures. Of 18 cases of E. Mitior there was no case where the attacks were wholly suspended, in 1 there was no improvement, in 2 the attacks were increased, and in 15 they were diminished in number by treatment. This is scarcely a fair comparison between the two forms, as the numbers are so unequal; but cases of uncomplicated E. Mitior are not common, being generally associated with the graver form, which combined cases are not inserted in this table. It is generally asserted in books that the non-convulsive form is much more intractable than the other, but the above table proves the contrary, as, for example, in Nos. 3, 4, 11, 12. It is true that the results do not appear so complete or striking in E. Mitior as in E. Gravior, but then it must be remembered that the number of cases is more limited, and the number of attacks originally much greater. In short, the table shows that if treatment does not completely avert the attacks of E. Mitior, it greatly diminishes their number.

Another variety of epilepsy is that which is characterized by the time at which the attacks occur. In the large majority of cases these take place both while the patient is awake and when he is asleep. I have, unfortunately, no observations to offer as to the effects of treatment on the diurnal or nocturnal attacks in patients suffering from both. The following table shows the result of treatment in 15 cases in which the attacks occurred only while the patient was awake, and in 7 cases where they took place only while he was asleep.

TABLE VI.—*Showing Effects of Treatment by the Bromides in Epilepsy.* 1. *Diurnal Form;* 2. *Nocturnal Form.*

No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.	No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.
			1. *Diurnal Form.*				
1	300	3	—	9	8	—	4
2	90	9	—	10	4	1	—
3	60	6	—	11	2	—	1
4	30	—	8	12	1	0	0
5	24	1	—	13	1	0	0
6	16	0	8	14	1	0	0
7	12	—	4	15	1	—	1
8	8	—	3				
			2. *Nocturnal Form.*				
1	60	1	—	5	4	—	2
2	16	—	4	6	1	0	1
3	8	2	—	7	1	150	—
4	2	—	1				

Of 15 cases of the purely diurnal form, we find that in 3 there was a total cessation of attacks during treatment, and in all the others there was diminution in their number. Of the 7 nocturnal cases, in none were the seizures entirely arrested, in 1 the attacks increased in number after treatment, and the remainder were relieved to a greater or less extent. Here, again, our numbers are small, and therefore difficult to found any definite principle upon; still there is enough to show that, contrary to the opinion expressed by most authorities, the nocturnal form of epilepsy appears to be as amenable to relief as the diurnal variety.

The next point for consideration is the question whether the fact of the epilepsy being hereditary or not makes any difference in the results of treatment by the bromides. In the following table all the cases with a perfectly sound family history are placed in the first part, and the second includes those in which either epilepsy or insanity could be proved to exist in any near relation.

TABLE VII.—*Showing Effects of Treatment by the Bromides in Epilepsy.* 1. *Non-Hereditary Cases;* 2. *Hereditary Cases.*

No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.	No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.
1. *Non-Hereditary Cases.*							
1	600	5	—	21	8	—	3
2	600	60	—	22	8	4	—
3	450	12	--	23	6	—	1
4	240	90	—	24	5	0	0
5	300	8	—	25	5	—	5
6	150	7	—	26	4	2	—
7	120	8	—	27	4	1	—
8	120	120	—	28	2	—	2
9	150	1	—	29	2	—	1
10	70	20	—	30	2	1	—
11	60	6	—	31	2	—	2
12	60	90	—	32	1	0	0
13	60	1	—	33	1	—	2
14	30	12	—	34	1	—	4
15	90	3	—	35	1	1	—
16	30	—	2	36	1	—	1
17	16	—	4	37	1	—	1
18	16	2	—	38	1	—	1
19	8	0	0	39	1	150	—
20	8	2	—				
2. *Hereditary Cases.*							
1	900	60	—	10	8	—	4
2	180	60	—	11	4	—	2
3	90	9	—	12	4	6	—
4	24	1	—	13	2	—	1
5	16	—	8	14	2	—	1
6	12	—	4	15	1	0	0
7	12	3	—	16	1	0	0
8	8	1	—	17	1	0	0
9	8	—	3	18	4	—	1

Thus in 39 cases with a perfectly sound family history, in 3 the attacks were totally arrested during treatment, in 2 there was no improvement, in 2 there was increase of seizures after treatment, and in the remainder there was diminution of the fits. In 18 cases where at least one near relation suffered from either epilepsy or insanity, in 3 the attacks were arrested, in 1 they were increased, and in the remainder diminished. In short, from a review of the details of the table it does not appear that the fact of the disease being inherited, or of its existing in other members of the family, makes any difference to the benefit we may expect to derive from treatment.

The next table attempts to show whether or not the age of the patient when he came under observation has any effect in modifying the action of the bromides, or whether it assists us in prognosing the probable result.

TABLE VIII.—*Showing Effects of Treatment by the Bromides in Epilepsy at Different Ages.* 1. *Under* 15 *Years;* 2. *Between* 15 *and* 30 *Years;* 3. *Between* 30 *and* 50 *Years;* 4. *Over* 50 *Years.*

No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.	No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.
1. *Under* 15 *Years.*							
1	900	60	—	8	30	4	—
2	600	5	—	9	8	0	0
3	600	60	—	10	8	—	3
4	450	12	—	11	4	6	—
5	240	90	—	12	4	2	—
6	180	60	—	13	2	—	1
7	150	7	—	14	1	150	—
2. *Between* 15 *and* 30 *Years.*							
1	300	3	—	17	5	0	0
2	150	7	—	18	4	—	2
3	120	3	—	19	4	1	—
4	120	120	—	20	4	1	—
5	90	3	—	21	2	—	2
6	60	1	—	22	2	—	1
7	60	6	—	23	2	—	1
8	60	90	—	24	2	—	2
9	16	—	4	25	1	0	0
10	16	—	8	26	1	0	0
11	16	2	—	27	1	0	0
12	12	—	4	28	1	0	1
13	8	1	4	29	1	—	2
14	8	2	—	30	1	—	4
15	8	4	—	31	1	1	—
16	70	20	—				

TABLE VIII.—*continued.*

No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.	No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.
3. *Between* 30 *and* 50 *Years.*							
1	30	—	2	6	5	—	5
2	30	—	12	7	2	—	2
3	12	3	—	8	1	0	0
4	8	1	—	9	1	—	1
5	8	—	3	10	1	—	1
4. *Over* 50 *Years.*							
1	30	—	8	2	24	1	—

A survey of this table shows in general terms that the age of the patient is neither an assistance nor impediment to the successful action of the bromides in the treatment of epilepsy. Whatever the age may be, whether in a young child or in an old person, the average of beneficial effects appears to be the same. At first sight it would seem as if treatment would be more successful in the young; but it is not so, as the two cases in the table over fifty years of age received as much average benefit as any of the others.

Does the fact of the disease being recent or chronic affect the prognosis of treatment? This will be seen by the following table, in which the length of time that the disease has existed is divided into four periods, namely, 1, those cases in which the attacks first began less than a year before treatment was commenced; 2, those in which they had begun from one to five years before; 3, those in which they began from five to ten years before; and, 4, those in which the disease had existed for over ten years.

TABLE IX.—*Showing Effects of Treatment by the Bromides in Epilepsy in Recent and Chronic Cases.* 1. *Under* 1 *Year;* 2. *From* 1 *to* 5 *Years;* 3. *From* 5 *to* 10 *Years;* 4. *Over* 10 *Years.*

No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.	No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.
1. *Under* 1 *Year.*							
1	600	60	—	6	4	2	—
2	60	6	—	7	2	—	1
3	8	—	3	8	2	—	1
4	5	0	0	9	2	—	2
5	4	—	2				

TABLE IX.—*continued.*

No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.	No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.
			2. *From* 1 *to* 5 *Years.*				
1	600	5	—	12	8	2	—
2	240	90	—	13	6	1	—
3	180	60	—	14	4	—	1
4	90	3	—	15	2	—	1
5	30	—	2	16	2	—	2
6	30	—	8	17	1	0	0
7	30	12	—	18	1	0	0
8	16	—	8	19	1	—	1
9	12	3	—	20	1	1	—
10	8	0	0	21	1	150	—
11	150	7	—				
			3. *From* 5 *to* 10 *Years.*				
1	450	12	—	9	8	—	3
2	300	3	—	10	8	1	—
3	900	60	—	11	4	1	—
4	90	9	—	12	3	1	—
5	60	1	—	13	1	—	1
6	30	4	—	14	1	—	1
7	16	2	—	15	1	—	2
8	8	—	4				
			4. *Over* 10 *Years.*				
1	150	1	—	7	12	—	4
2	120	3	—	8	8	4	—
3	120	120	—	9	5	—	5
4	70	20	—	10	1	0	0
5	60	90	—	11	1	0	0
6	16	—	4	12	1	—	4

In this table we observe very singular results in the treatment of this remarkable disease. In most ailments, the longer they have existed and the more chronic they are, the more difficult and imperfect is the prospect of recovery. This does not appear to hold good in the case of epilepsy. For when we analyze the above table we find that the results, on an average, are as satisfactory in those cases in which the disease has existed over ten years as in those which began less than one year before the patient came under observation. For example, we find in section 4 of Table IX. 12 cases in which epilepsy had existed for over ten years prior to treatment; of these, in 2 the attacks were completely arrested, in 1 there was no improvement, in 1 the attacks were increased, and in the remainder the seizures were as beneficially modified as in the other sections. Thus it would seem that we are not to be deterred from treating cases of epilepsy, however chronic they may be, as the results appear to be as good in modifying the attacks in old, as in recent cases.

Another important question arises: Does the general health of the patient in any way influence the effects of treatment? In the following table those cases are collected in section 1 whose general health was to all appearances robust and free from disease. In section 2 are those in which organic disease could be demonstrated, or in which the condition of the patient was evidently unfavourable.

TABLE X.—*Showing Effects of Treatment by the Bromides in Epilepsy*—1. *In Healthy Persons;* 2. *In Diseased Persons.*

No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.	No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.
			1. *Healthy Persons.*				
1	900	60	—	22	8	4	—
2	600	60	—	23	4	2	—
3	150	7	—	24	4	1	—
4	150	1	—	25	4	2	—
5	120	3	—	26	2	—	1
6	90	9	—	27	2	—	2
7	70	20	—	28	2	—	1
8	60	1	—	29	2	—	1
9	60	5	—	30	2	—	2
10	60	90	—	31	2	–	1
11	30	—	2	32	1	0	0
12	30	—	8	33	1	0	2
13	30	12	—	34	1	1	—
14	16	0	0	35	1	0	0
15	16	2	—	36	1	0	0
16	16	—	4	37	1	0	1
17	12	3	—	38	1	—	1
18	8	2	—	39	1	—	1
19	8	0	0	40	1	1	4
20	8	—	3	41	1	150	—
21	8	—	4				
			2. *Diseased Persons.*				
1	450	12	—	9	8	—	3
2	300	3	—	10	8	1	—
3	240	90	—	11	6	—	1
4	180	60	—	12	5	—	5
5	90	3	—	13	4	—	1
6	60	6	—	14	4	6	—
7	24	1	—	15	1	0	0
8	12	—	4				

Here, again, a consideration of the table demonstrates that the condition of the general health has no influence on the successful progress of treatment, as those cases under the head of diseased persons made apparently as satisfactory progress as those in a perfectly robust condition.

As a specimen, the following table shows the result in those cases complicated with a permanent lesion of a motor part of the brain, namely, hemiplegia, and of an intellectual portion, in the shape of idiocy:—

TABLE XI.—*Showing Effects of Treatment by the Bromides in Epilepsy complicated with—*1. *Hemiplegia*; 2. *Idiocy.*

No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.	No. of Case.	Average number attacks per month *before* treatment.	Average number attacks per month *after* treatment.	Number attacks during last six months of treatment.
1. *Hemiplegia.*							
1	450	12	—	5	8	—	3
2	240	90	—	6	8	1	—
3	30	4	—	7	4	6	—
4	24	1	—				
2. *Idiocy.*							
1	180	60	—	4	30	4	—
2	120	120	—	5	4	6	—
3	60	6	—				

Here it may be observed that of 7 cases complicated with hemiplegia, in 1 the attacks were increased after treatment, but all the others were relieved in average proportion. Of the 5 cases in idiots, in 1 there was no improvement, in 1 the attacks were subsequently augmented, and in the others there was improvement. The numbers are far too limited to found any reliable dictum upon; at the same time, it must be admitted that while epilepsy complicated with these grave lesions is perfectly amenable to treatment, this table serves to show that the proportion of non-success is comparatively large.

Having so far endeavoured to give strict experimental and statistical data of the results of the administration of the bromides on the attacks of epilepsy, it is necessary now to consider any injurious influences which these drugs may exert on the general health or condition of the patient. The pathological effects of the bromides, persevered in for a prolonged period, may be practically summed up under the three following heads:—1. Physical weakness; 2. Mental weakness; and 3. Eruption. An inquiry into these points was made in 60 cases, with the following result:—

No toxic effects of the bromides, . .	39
Toxic effects of the bromides, . .	21
Physical weakness, ...	17
Mental weakness, ...	11
Eruption, ...	10

Thus, in about 66·6 per cent. of cases under the constant influence of the bromides from a period of six months to four years, patients, while enjoying the advantages of the arrestment or diminution of the attacks, showed absolutely no traces of any adverse physiological or pathological actions of the drug. I agree with those who believe that there is a peculiarity of the epileptic state which renders the system specially tolerant to the bromides, and it is certainly fortunate if it is so. In about 28·5 per cent. there was a condition of physical weakness, by which is understood a feeling of languor and fatigue, and a sensation and the actual existence of general muscular debility. I have, however, never seen this to any extent, or extend beyond discomfort to the patient. These symptoms were temporary, often disappearing although the drug was continued, and always when it was for a time stopped. In about 18·8 per cent. there existed what may be called mental weakness, namely, a feeling of depression, dulness, drowsiness, and general blunting of the intellectual faculties. These symptoms, like those above, I have never found permanent, but readily removable by diminishing the dose or by ceasing the administration of the drug for a short time. Finally, in about 16·6 per cent. there appeared the so-called bromide rash, but, with the exception of one case, to a very limited extent. This symptom is also temporary. In short, the poisonous effects of the bromides in epilepsy are, as far as my experience goes, of very little moment. They are sometimes inconvenient and troublesome, but are, as a rule, very limited in extent and trifling in degree. Any disadvantages are immensely counterbalanced by the benefits the remedy confers.

It has been stated before that no attempt would be made in this paper to prove that epilepsy was curable by therapeutic means. Its aim has been to show the effects of the bromides on the attacks or symptoms of that disease. It is common to hear it remarked, as if this were of no importance, "You only arrest the fits, but you do not know, and cannot cure, the original lesion. You do not go to the fountain-head of the disease, but simply relieve its results." In reply, I would ask, Of what disease do we know the ultimate nature any better than that of epilepsy? and if we did, how would that assist us in treating it? What drug in our pharmacopœia cures any single disease, or do other than, by attacking and relieving symptoms, leave nature to remove the morbid lesion? Even quinine, to which therapeutists triumphantly point, only arrests certain paroxysms until time removes the poison from the blood, as it does in most malarious affections. So far from being a small matter, I believe there are few, if any, drugs at our disposal which can be demonstrated to have a more beneficial action in the treatment of disease than that of the bromides in epilepsy. Besides, I decline to admit the statement that complete recovery does not follow their administration. Various authors have reported cases, and that these are rare is due to reasons stated before, and chiefly on account of the long period of treatment necessary for success.

This inquiry may be summed up in the following general conclusions:—

1. In 12·1 per cent. of epileptics the attacks were completely arrested during the whole period of treatment by the bromides.

2. In 83·3 per cent. the attacks were greatly diminished both in number and severity.
3. In 2·3 per cent. the treatment had no apparent effect.
4. In 2·3 per cent. the number of attacks was augmented during the period of treatment.
5. The form of the disease, whether it was inherited or not, whether complicated or not, recent or chronic, in the young or in the old, in healthy or diseased persons, appeared in no way to influence treatment, the success being nearly in the same ratio under all these conditions.
6. In 66·6 per cent. there was no trace of bromide poisoning In the remaining 33·4 per cent. this was observed in varying kinds and degrees, but in no case to any serious extent, namely, physical weakness in 28·5 per cent., mental weakness in 18·8 per cent., and the so-called bromide eruption in 16·6 per cent.

ARTICLE III.—*On the Shape of the Empty Female Bladder.* By D. BERRY HART, M.D., F.R.C.P.E., Assistant to the Professor of Midwifery, University of Edinburgh, etc.

(*Read before the Obstetrical Society of Edinburgh, 12th January* 1881.)

THE empty female bladder may present one of two shapes. In the large majority of specimens figured it forms with the urethra a Y shape on sagittal mesial section. The oblique legs of the Y may be about equal in size, or the posterior may be shorter (Figs. 1 and 2). This form is so common that it has been accepted hitherto by all authors as the normal one. In certain cases, insignificant in number as compared with the former, the empty bladder cavity forms with the urethra a continuous tube on vertical mesial section (Fig. 3). As a whole, in such cases, it is oval in shape, corrugated, and firm to the touch. This latter shape is constantly the one found in the lower animals, such as the rabbit and dog, and is the only one I have ever seen in the human fœtus (Fig. 4). If, therefore, the pelvic floor of a woman be viewed on its peritoneal aspect, the fundus of the empty bladder will be found to be almost always large and concave, while in a few cases it is small and convex. In the one case, the inner surface of the upper segment of the bladder, large in area, is in contact with the inner surface of the lower segment; in the other, the anterior and posterior walls, small in area, touch one another.

To-night I wish to consider why we should have the bladder presenting two such sharply contrasted forms, to attempt to settle which is the normal one, and to consider the whole question in some practical bearings.

The anterior, posterior, and lateral relations of the bladder are of interest. Anteriorly it is separated from the pubis by a large amount of fat—the retropubic pyramidal fat (Figs. 1 and 2). Posteriorly the connexion between it and the uterus and upper part of the vagina is also loose. Laterally the bladder is more fixed. The same facts as to looseness of anterior and posterior connexions holds good for the male bladder.

The arrangement of the unstriped muscular fibres of the bladder is on the same plan as those of the uterus, *i.e.*, we have external longitudinal unstriped muscular fibres, with their fixed point below; circular ones running at right angles as well as obliquely to these, and an internal longitudinal layer below the submucous coat. It is evident that their unhindered contraction will give the bladder the cylindrical form which I have described as the one rarely found. So far, then, as the normal arrangements of the bladder go, we see provision made for muscular contraction which shall ultimately bring the anterior and posterior walls, diminished in area, in contact.

I have now to take up the Y-shaped bladder and explain its occurrence. This can be beautifully studied in the specimen I here show, of which figure 1 is an accurate drawing. In this specimen the Y shape which the bladder forms with the urethra can be well seen. The causation of this shape is as follows:—

It can be readily seen that the uterus is anteflexed. Starting from the posterior angle of flexion, and running to the left and upwards, thickened bands can be seen, the cicatrized left utero-sacral ligament. The shortening of the ligament has had a four-fold effect. It has dragged the uterus backwards and to the left side. Inasmuch as the cervix is fixed in the pelvic floor, and the fundus surrounded by intestine, the effect of this backward drag has been specially spent on the uterine insertion of the ligament, *i.e.*, the uterus has become anteflexed. A simple experiment will make this clear. If a gum elastic bougie be fixed at either end, and then be grasped between the finger and thumb about two inches above its lower end and pulled back, the bougie will become flexed or bent. In the fourth place, the bladder has been pulled back so as to make its retropubic attachment tense and pull its posterior wall behind the urethra, *i.e.*, to give it the Y shape seen.

Fürst has published a beautiful section of a uterus less anteflexed, and a bladder less distorted, bearing out exactly the explanation already given (Fig. 2).

The evacuation of the urine seems to be accomplished by the contraction of its unstriped muscular fibre and the action of intra-abdominal pressure. Both of these are effective only when the empty bladder can assume such a shape as figure 3 shows, *i.e.*, when the anterior and posterior walls of the bladder diminish in area and come together. It is evident that when the bladder is tied back as already described (Fig. 1), its contraction is minimized, and the expulsion of the urine must be chiefly accomplished by intra-abdominal pressure. In one so-called case of hysterical retention I found the uterus anteflexed and drawn back so far as apparently to account for the patient's inability to micturate oftener than once in one or two days. At the same time, I have seen patients in a like condition where urination was normal.

The practical points I wish to bring out are as follows:—It is now undoubted that the normal uterine position is one of inclination in front of the axis of the brim. I do not believe, however, that the anteversion is so excessive as most German authors allege, as the amount of anteversion they believe in renders necessary the figuring of the Y shape of the bladder and urethra as normal.

When the empty bladder and urethra form the Y shape we have no vesico-uterine pouch, but a vesico-abdominal one. The less frequent shape of the bladder gives the vesico-uterine pouch.

It is evident by examination of plates and specimens that the muscular contraction of the bladder is more marked when the bladder has the cylindrical form than when it has the Y form. Braune and Heitzmann figure bladders of this shape whose walls are antero-posteriorly as thick as those of the unimpregnated uterus (Figs. 3 and 5). In no bladder with the Y shape is this nearly the case.

The conclusions advanced are as follows:—

1. The empty bladder in the fœtus has always its anterior and posterior walls in contact.

2. In the adult female the same is the normal one for the contracted bladder, but is rarely found.

3. The Y shape can, in certain cases, be traced to a dragging back of the uterus by inflammatory cicatrization, or to undue anteversion.

4. The Y shape is, however, found normally in some cases, *e.g.*, the early puerperium (Rüdinger).

I have not given a vertical section of the female pelvis with the organs placed in what I believe to be the normal posture. Satisfactory attempts, based on clinical investigations and sectional anatomy, have been made by Schultze, His, Schröder, F. P. Foster of New York, and others. At present, however, gynecologists have not sufficient data to enable them to be dogmatic in this matter. Clinical investigation of the position of the uterus bimanually gives it an excessive amount of anteversion (well seen in Kocks's plates), owing to the fact that the examiner anteverts it beyond its normal anteversion in order to grasp it, and, in addition, lengthens the vaginal walls. The question of the amount of projection of the soft parts below the pelvic outlet has still to be settled. For this reason I feel that the figuring on my part of any normal diagrammatic section would lead to error. To avoid this I have given woodcuts only of actual sections. Those who wish to see additional accurate drawings of actual specimens should also consult the atlases of Pirogoff, Legendre, and Braune, and a paper by His.[1]

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[1] Since writing the above, my friend Dr Milne Murray has made the ingenious suggestion that the bladder has its systole and diastole just as the heart has; that

DR HART ON THE SHAPE OF THE EMPTY FEMALE BLADDER.

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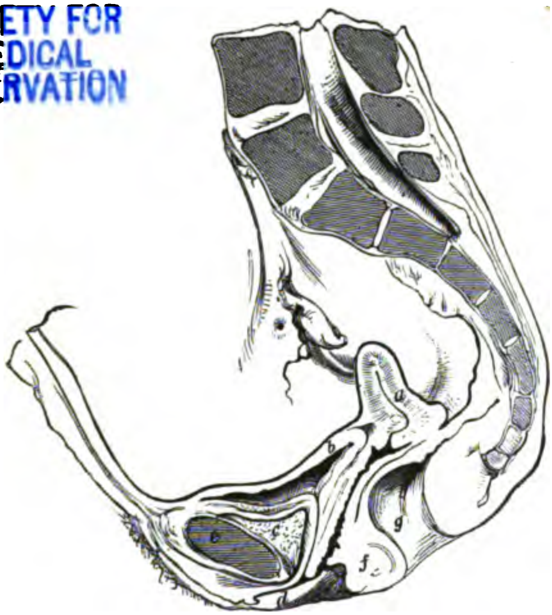

FIG. 1.—Vertical mesial section of female pelvis (spirit-hardened), showing Y shape of bladder (*b*). The uterus (*a*) is anteflexed and drawn back by cicatrized utero-sacral ligament.

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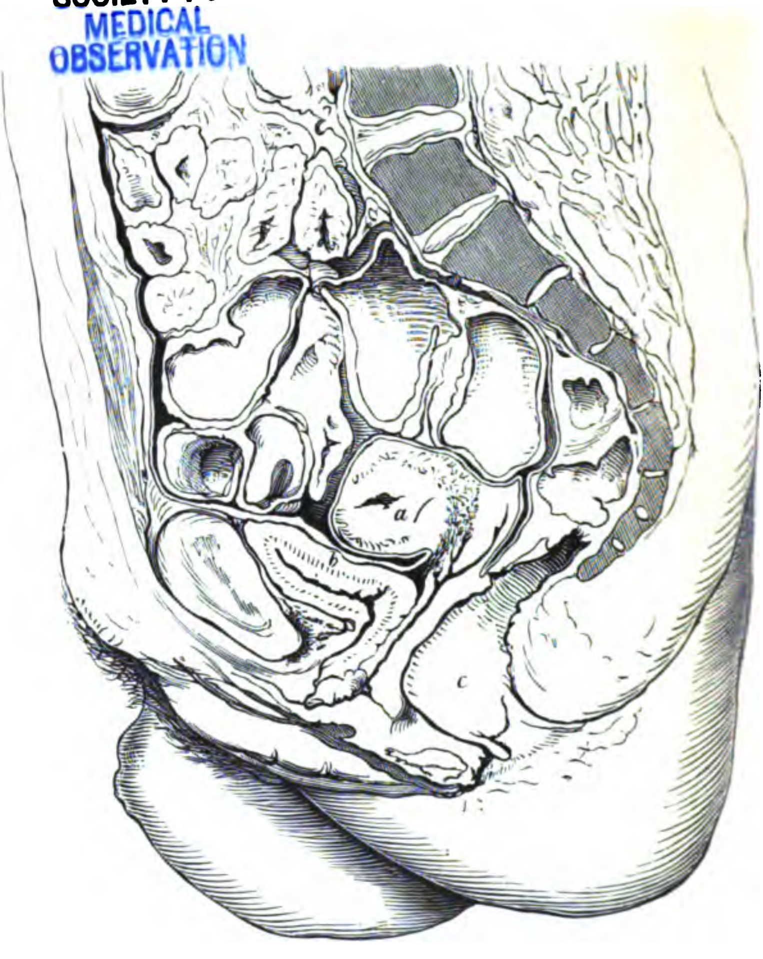

FIG. 2.—Vertical mesial section of female pelvis (frozen). The Y-shaped bladder (*b*), and the vesico-uterine and retro-uterine pouches, neither of which contains intestine, are well seen.—(Fürst, in *Archiv für Gynäkologie*, Bd. vii. S. 407.)

a Uterus.
b Bladder.
c Rectum.

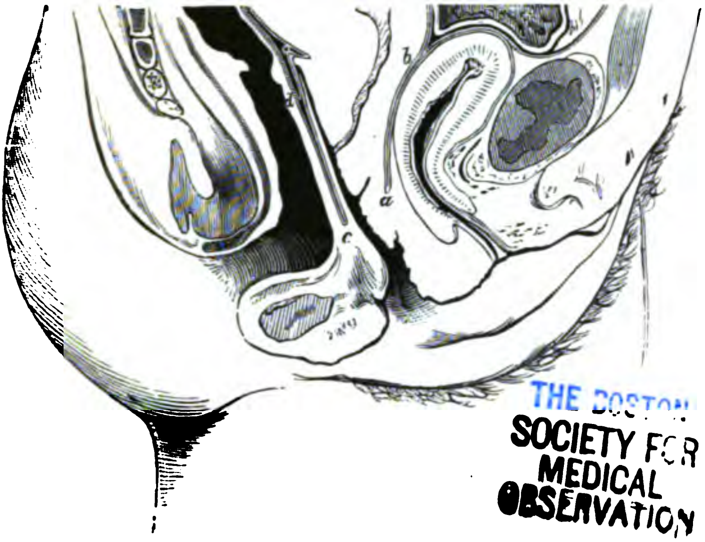

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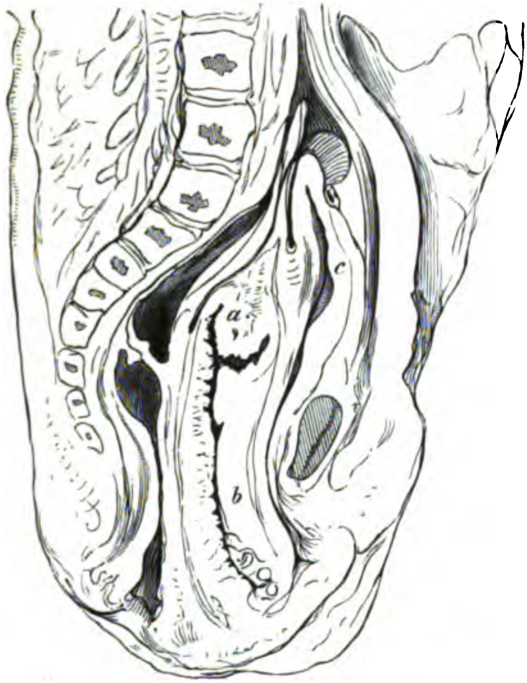
FIG. 3.—Vertical mesial section of female pelvis (frozen).—*a b*, shows the posterior loose connexion of the bladder to the cervix and vagina. The peritoneum passes from bladder to cervix at *b*. *d c* shows loose connexion between rectum and vagina, the pouch of Douglas descending to *d*. The bladder is empty, contracted, and has its anterior and posterior walls in contact.—(Braune.)



4.—Vertical mesial section of fœtal female pelvis (spirit-hardened).—Empty bladder (*c*) is above pubis; *b* is vagina; *a* uterus cut to one side.

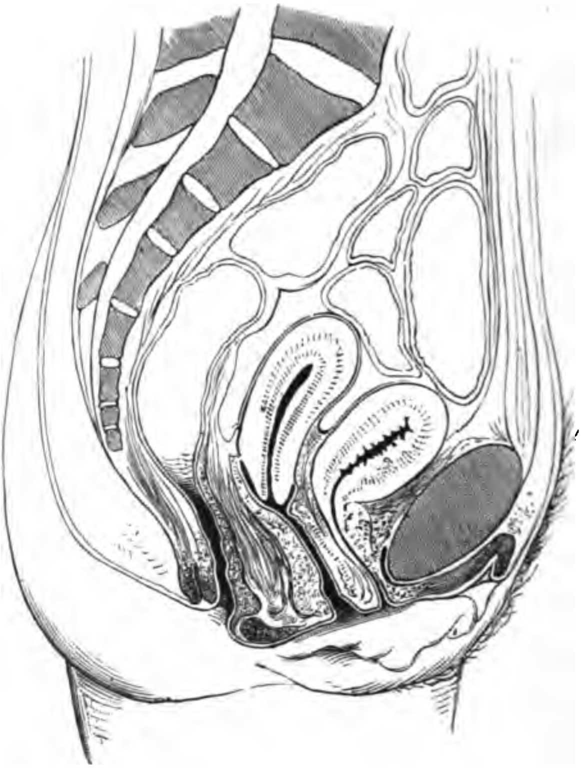


Fig. 5.—Vertical mesial section of female pelvis (frozen), showing contracted bladder and ante-uterine and retro-uterine pouches.—(Heitzmann.)

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For other literature see Foster's paper.

ARTICLE IV.—*On Fever in Ningpo and Chefoo.* By W. A. HENDERSON.

DURING a residence of eighteen months in Ningpo[1] I have been very much struck by the absence amongst the members of the community of the habitual deposit of urates in the urine, the condition termed lithuria; whereas, during a long residence in Chefoo, I found it frequently existing amongst the foreigners. This pathological difference between the two localities led me to make inquiry of an individual who had removed from Chefoo to Shanghai, and

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the contracted form in Figs. 2 and 3 is the bladder in systole, and the Y shape in diastole. Of course, this holds good only for cases where there is not posterior pelvic inflammatory cicatrization. One interesting point should be noticed, viz., that the women in whom Braune figures the bladder in systole, *i.e.*, contracted, died violent deaths by suicide (hanging). It is evident that this systole of the bladder, if it exists, must draw the cervix forwards. There is no clinical evidence on these points; and clinical investigation, from its difficulty, would be apt to lead into fallacy. At the same time, carefully conducted examination would lead to some interesting results in regard to urination—a subject not as yet well understood.

[1] The latitude of Ningpo is 29° 55′, and that of Chefoo 37° 35′.

who had formerly been very much subject to the deposit, as to his present state. He told me that after the change of locality he became entirely free from it, even after moderate excesses in diet. In Chefoo he had, like others similarly affected, to exercise the greatest caution in regard to diet, as any strain upon his liver was at once followed by the deposit. In those subject to lithuria, as a rule, the deposit immediately appeared after the consumption of an immoderate amount of any article of diet, solid or liquid, with the exception of two in which excess would be difficult, viz., bread and water. From another individual who had resided in Chefoo I got a like experience. Previous to his taking up his abode in Chefoo he had not been troubled with the affection. After residing there for some time he lost weight considerably. This he was able to gain in part when in full exercise, but it was lost again when the exercise was relaxed. Now, with change of residence to the south, he has recovered his original weight. A third individual, with a strong tendency to lithuria, was compelled periodically to seek temporary refuge in a moister climate, and invariably returned in a state of vigour which he could not otherwise have attained. A fourth was so affected with lithæmia that his medical adviser ordered him to leave Chefoo, and the change was followed by the happiest results. The explanation of the presence of the deposit in the one locality and its absence in the other seems to be found in the difference between the two climates, the northern being dry and the southern moist. As the hygrometry of both ports has been neglected, we are left to form the notion of their relative humidity from the mean daily range of temperature. Buchan states "that the daily range is least in wet climates and in temperate climates. Hence it is less in Ireland than in Scotland, greater in England than in both these countries, and still greater on the continent of Europe." The mean daily range at Chefoo for the year 1879 was 17°; that of the previous year was 16°. These figures are not obtained by unusual dryness during a few months and corresponding dampness in others, but to a general monthly approximation to the average. During a couple of varying months each year it rises as high as 20°. In the month of June 1876, the year of drought, it was 26°. During 1878 and 1879 the lowest monthly range was 12°. In Ningpo the range has not been observed since 1872 and 1873; previously it had not been noted. The mean daily range of those two years was 9°. In Ningpo the highest monthly ranges are about 13°, and the lowest 5°. It is thus seen that Ningpo has about half the range of Chefoo.

To these figures several objections, amongst which is that they are the difference between the mean of the coldest and the mean of the warmest of the twenty-four hours, might be made; but, unfortunately, they are all that can at present be offered on the subject. Chefoo may be regarded as bracing or exciting according to the degree of dryness, and Ningpo as sedative or relaxing according to the presence or absence of excessive humidity.

Judging from what I have stated, there appears to be some casual connexion between the tendency to lithæmia in Chefoo and the dryness; and, on the other hand, that the heat and moisture of Ningpo is not only non-conducive to the development of the lithæmic state, but perhaps favourable to the relief of the morbid condition. Murchison, in his lectures on functional disease of the liver, does not discuss the question of climate either in relation to the production or cure of lithæmia. Dr Garrod, in his work on gout, which disease is a result of lithæmia, while giving its usual recognised causes, mentions the frequent summer immunity from gout, but does not state whether it is most influenced by moist or dry air. In my experience of Chefoo, the tendency to the lithate deposit existed during the dry heat as well as during the dry cold, and throughout both seasons the same caution was necessary.

In Ningpo there are several individuals who I am sure would be unable to bear the strain of Chefoo unless living in the plainest possible way; but, residing as they do in the more southern climate, they have a greater range of diet, and not merely with regard to food, but they can indulge in alcohol and tobacco in a way in which it would be impossible for them in the dry and stimulating atmosphere of Chefoo. Not that I believe it would be difficult to produce lithæmia, and ultimately gout, in the individuals in question, as we know that this disease has been produced in all climates wherever there has been in diet continued nitrogenous and alcoholic excess. As to the rationale of the connexion between lithæmia and the climates mentioned, the following appear to me to be at least a few of the possible links in the chain of causation. As a dry atmosphere may affect the lithic acid diathesis through elimination, oxidation, and the circulation, to each of these modes it would be well to separately refer.

1. *Elimination,* of the three, is the most evident. Urea, in health, is almost solely eliminated by the kidneys. The fractional amount thrown off by the skin may be practically disregarded. Now, a less amount of fluid passes through the kidney in a dry than in a moist climate, owing, in the former, to the greater relative activity of the lungs and skin. From the lungs of those who drink in dry air the dry air quaffs large draughts of water, giving rise to deliciously exhilarating feelings. Not only does dry air rob the blood of its water by the lungs, but also by the skin; perspiration is less sensible in the dry than in the moist climate, yet we know that it is greater, the dry air rapidly carrying it off as it is formed. On the contrary, the moist climate checks evaporation from both of those organs; hence in those who have the minimum amount of renal tissue, after any excess in diet, there will be a tendency to retention of waste albuminous matters, owing in the dry climate to minimum elimination of fluid by the kidney. In such individuals it is of the highest importance that there ever be a due amount of water passing through the Malpighian tufts for the sluicing of the tubular epithelium.

2. *Oxidation.*—Parkes, in his work on Hygiene mentions without comment an experiment of Lehmann's on pigeons, which, when placed in moist air, exhale carbonic acid in larger quantity than in dry air. This implies increased oxidation, which is facilitated by a more dilute state of the substances to be oxidized. It is to be remembered that birds eliminate waste albuminous matter in the form of uric acid. From the above it might be inferred that the blood of birds has a high specific gravity; but on referring to experiments upon this point we find that while the blood of the duck and the fowl is a little above the average specific gravity of that of man, that of the pigeon and the raven are lower. Then, in examining the relative amounts of the corpuscular and plasmic parts of the blood, it is found that the former is much less in the owl than in man, but much greater in the vulture. From these different conditions of the blood the common state lithuria is not to be inferred; and further, from these we would be inclined not to look so much to the blood as to the tissues for the explanation of the phenomenon. Urea is generally admitted to be formed principally in the liver. Conceive an individual with the minimum amount of hepatic tissue necessary to health, and supply it with less than the amount of fluid necessary to complete oxidation, and the result would be suboxidation with its attendant lithates. This would be especially the case after an excess in diet.

3. *The Circulation.*—This is the least evident of the three modes, and upon it I would not lay much stress. Dry air increases the rate of the blood by its *vis a fronte* effect. This stimulation may tend, in the lithic acid diathesis, especially when the vessels are of large calibre, to local reaction. Occasionally associated with lithuria I have observed that the vessels are large. One case that came under my notice well illustrates, to my mind, the effect of such an atmosphere as Chefoo upon a weak circulation that may be brought under its influence for a lengthened period. The individual in question had no tendency to lithæmia, nor were the vessels of undue calibre; but the capillary walls were thin and the heart weak, though there was no disease, cardiac or otherwise, generally termed organic. Continued residence, in this case, was followed by general anasarca. Removal to a moist climate in the course of a couple of months gave rise to diuresis with return of the body to its normal size. It is here worthy of notice that Dr Watson of Newchwang, in an early number of the *Customs Medical Gazette*, well described the effect of the climate of North China on the nervous system. Lest it be thought that an undue importance is attached to the question of climate in relation to lithuria, I would distinctly state that it is simply here regarded as an element in the complex cause of which the principal factors are dietetic errors, together, it may be, with some hepatic defect, either smallness in the amount of the glandular tissue, or of an inherited or acquired character. I would further guard myself by pointing out that my remarks as to the

effects of climate on lithuria apply only to long residence, and not to the short stay made by summer visitors to Chefoo. In the case of the latter great range of temperature simply means cool nights and the possibility of refreshing sleep, and the dryness of the atmosphere is the best remedy for systems poisoned by the muggy, mildewy, and malarious climates of the south. In this respect the ports of Japan frequented by visitors cannot vie with Chefoo. Nor do my remarks apply to the majority of the residents in Chefoo, among whom are to be found splendid specimens of humanity, with livers equal to any festive occasion, and who will be able to enjoy their champagne and their champagny atmosphere to the close of the natural term of mundane existence. In Ningpo, if the effects of uric acid are not so apparent, there is another poison, malaria, of which the consequences are much more extended in range and of a more dangerous character. To enumerate the results of lithæmia in Chefoo we would be compelled to run down in part the gamut of diseases given by Murchison; but to attempt the description of the effects of malaria in Ningpo we would find before us a task of still greater extent. Ningpo is situated on the banks of a river twelve miles from the sea. It is surrounded by an alluvial plain nearly encircled by hills. The plain has a diameter of about from twenty to thirty miles. It is intersected everywhere by canals and irrigating ditches for the cultivation of rice, of which the fields are kept flooded with water from June to the end of September. Here are the conditions favourable to the development of malaria, and its protean forms are everywhere around us manifest. Amongst a few of the malarial disorders may be mentioned neuralgia, recurrent diarrhœa, enlargement of the liver and spleen, anæmia with subnormal temperature, and fever, intermittent and remittent. Of ague is to be seen the quotidian, tertian, and quartan types, but principally tertian. During the last hot season but few of my patients have escaped fever. Among them there has been but little diarrhœa and no dysentery, whereas during the previous hot season the converse obtained—little fever but a considerable amount of diarrhœa. This comparison is interesting, as the hot season of 1880 has been cool and moist, while the hot season of 1879 was hot and dry for Ningpo. The thermometer for the four months June, July, August, and September 1880 shows a mean maximum of 81°·2, and a mean minimum of 75°·3. The difference 4°·8 indicates in a measure the amount of moisture. During that period rain fell on fifty-three days; and in June the prevailing winds were from the south, in July and September they were variable, and in August from the north. In striking contrast are the meteorological returns for 1879. For the corresponding months the mean maximum was 85°·5. The mean minimum was not accurately noted. Rain fell on twenty-eight days, and the prevailing winds were southerly. The fever that has prevailed amongst the foreigners has been of the remittent type. In some it begins with a low temperature of from 99° to 100°, in others of 102°, and in a third class from 103° to 105°. As I have found all the forms amenable to treatment without resorting to change of air, I am unable to describe the course they would naturally take if left to themselves. However, two cases came under my notice which were not subjected to treatment, and these ran on for six weeks. In both the temperatures were low; and I have heard of a number of cases continuing for fully that length of time. Last year I watched one case of the lowest form, in which the temperatures varied from 99° to 100°, and which persisted for several months, no active measures of treatment having been resorted to. I have seen the same elsewhere in China. The sisters of charity tell me that in their experience the fever has a course of from nine days to six weeks, and rarely, though occasionally, fatal. Though the mortality is small, yet it is to be seen inducing the disorders already mentioned. The lowest form cannot well be detected without the thermometer, and when this instrument is not used I am of opinion that it may run on for months without being detected, gradually undermining the constitution, and producing, like the other forms of fever, the pallid, washed-out, and miserable specimens of humanity which around us are everywhere to be seen. During the heavy rains of June, when vegetable growth was active and the minimum amount of waste matter was on the surrounding paddy-swamps, amongst the foreigners there were no cases of fever. Then in July three cases appeared, in August eight, and from thence the numbers increased at a rapidly accelerating ratio to the middle of October, involving nearly the whole community in its tide. During October it had also been very prevalent amongst the natives, and I am told that, owing to the numbers stricken by it, in many places the crop has been with the greatest difficulty gathered. Since writing the above it is reported that considerable numbers have died from the fever.

At the beginning of the season I found that quinine had but a tardy effect upon the severer forms, and none when the temperature was low. A case turned up where the liver was manifestly at fault; and remembering Dr Rutherford's experiments as to the effect on the secretion of bile of certain medicines, amongst which was the salicylate of sodium, the only form of the drug which I possessed, I gave it in the doses recommended by him, followed by quinine grs. 10 in pill, and found the effect magical when the temperature was 99° and 100°. The salicylate with quinine was administered at bedtime, the bowels having been previously acted upon, and cream of tartar ordered to be taken on the following morning. This I frequently found sufficient; but, when not so, a repetition of the dose on the following night never failed to suppress the febrile symptoms, when the temperature rose from 102° to 105°; the drugs were administered twice a day, after breakfast nd at bedtime, causing at once a rapid reduction of the temperature, and invariably succeeding within the third day to extinguish he fever. The last case ran thus: Called to see the patient on the afternoon of the second day of fever; temperature then 104°. Third day of fever, morning temp. 103°; patient so stupified with fever that he forgot to take the cream of tartar before breakfast. Temperature in the afternoon 102°. Fourth day, morning temp. 102°, afternoon 101°. Fifth day, morning 100°, afternoon temp. normal. Where there was vomiting the drugs were administered per rectum with equal effect.

ARTICLE V.—*Is Peat-Reek an Antidote to Phthisis?* By Dr G. HAMILTON, Falkirk.

THE following statements and remarks were suggested by Dr Beddoe's address at the late Social Science Congress, and were intended for insertion in a newspaper where the address had appeared. The subject-matter, however, although it may be interesting to the general public, is too purely medical for the columns of a newspaper, and had better, therefore, in the first place, at any rate, be brought under the notice of the members of our profession.

Dr Beddoe says:—"One curious and unexpected result of building improved cottages has been brought to my notice. I am informed that in a certain Highland district, where the proprietors have exerted themselves to build decent and air-tight dwellings for their small tenants, crofters, and labourers, instead of any improvement of health following, consumption, formerly uncommon, became very rife and deadly;" and again, "in the case of the Highlanders, it is probably want of ventilation which is the fault of the new and comfortable houses." In a subsequent number of the *Scotsman*, Dr Donald Masson, dating from the Edinburgh Gaelic Church, says it is evident and admitted "that modernized house accommodation there is in some way associated with a marked increase of consumption;" and again, "there may possibly be some grain of truth in the theory that the abundant peat-reek of the old and smoky bothies may have had some antiseptic effect on Professor Lister's hypothetical 'germs.' It is a fact, also, that the old smoky bothies were generally larger than the modern cottages. But amid the open breezes of Skye and Jura, and with people living so much in the open air as our Highlanders and Islanders, neither of these considerations can have any appreciable—I had almost said any real—effect."

This subject, I recollect, excited a good deal of attention among medical men and others some twenty or twenty-five years since, and some able articles were written upon it, particularly one in the *British* *and Foreign Medico-Chirurgical Review.* The fact then, as now, was admitted, but the illustrations were then drawn more from what was observed to have occurred in the houses of clergymen and persons belonging to the better ranks than from improvements in the dwellings of cottars and labourers. The two combined make the fact itself the more striking, and cut away the explanation that it is the deteriorated food of the cottars that now makes them more liable to the disease, which appears to be the opinion of Dr Masson.

At the time I have mentioned I got considerably interested in the matter from what I had observed, in the district where I practise, among two classes of workmen, the colliers, and the moulders in our iron-foundries. At the time I refer to I had been practising a good deal for twenty years among both classes, and had not seen among them, as far as I recollect, a single well-marked case of consumption. I spoke to the late Dr James Girdwood, who had practised here much longer among the same classes, and I found that his experience was the same as my own. Up to that time, I may here explain, colliers used oil lamps, fastened to the front of their caps, at their work, and the effect of this was to thoroughly impregnate the lungs with lamp-black, mixed also with coal-dust. To give an idea of the effect of this on an old collier's lungs, I may mention that a few years since I had to make a medico-legal examination of the body of a man who had been about fifty years employed as a collier, and who was accidentally drowned while at his work. On cutting into and squeezing the lungs, a stream of fluid flowed from them as if I had emptied a blacking-bottle; and yet this man, up to the day of his death, had been able to follow his usual employment. No doubt this state of the lungs generally shortened the colliers' lives, as it rendered them liable to difficult breathing and its consequences, to spasmodic asthma, and to what they used to call "black spit." Of the occasional intensity of the latter some conception may be formed when I say that I have had patients in whom, when they were made to lean much over the front of the bed, this ran out of their mouths in a black stream.

In more modern times the collier's condition in this respect has been much improved, and no doubt his probability of life lengthened, from the introduction of tallow lamps instead of oil lamps; but it has struck me lately that, just as he has escaped from asthma and black spit, there has been, in a modified form, a greater tendency to tubercular deposition. It happens that at the present time I have two suspicious cases of this kind under my care. In all my forty-seven years' practice I recollect of seeing only one case of rapid consumption in a young collier, and another in a submanager, who, however, though constantly in the pits, had not worked as a collier.

As to moulders, again, they use a mixture of finely-ground charcoal and pease-meal for dusting their moulds, and their lungs become impregnated with this in the same way as in the case of colliers. I had the lungs of one who had worked in Carron Works for more than forty years analyzed, and considerable portions of the lungs were found to be composed of fully one-fourth of charcoal. Notwithstanding this, these generally are hearty, healthy men, and I should say, roughly speaking, are as long-lived as the average of workmen. Among them I have never known or heard of a single well-marked case of consumption, such as we constantly see among other classes.

Well, here we have before us some statements which apparently may be assumed as being based on reliable facts. Has any practical use hitherto been made of them, or have they yielded any additional resources to medical science? Not that my experience or medical reading has made known to me. For myself, the idea has long haunted me as a possibility that something might be made of it as a preventive or prophylactic, and I got, a considerable time since, a few patients, in whose lungs tubercles had begun to be developed, to inhale lamp-blacking dust, scented with otto of roses, to make it less unpleasant than when used alone. The apparatus I used was simple enough, viz., a small teapot, into which the blacking was put, and shaken up each time the patient applied the mouth to the spout and inhaled it. I cannot say, however, that I got any patient to persevere with it so long as to give me a proof of any appreciable effect having been produced by it. Curiously enough, only the week before I read Dr Beddoe's address I had my interest in the subject re-excited by seeing in the window of one of our apothecaries a little ingenious bellows for using "Hardeman's London Beetle Powder," one of which I purchased, intending to experiment with it afresh. It seems admirably adapted for the purpose I have mentioned. I have tried it with the blacking on myself, and its use is not in the least disagreeable. Altogether, although presented in the crude form in which alone I have been able to give it, the subject is of such great importance as, I think, to justify the attention of both the profession and the public being called to it.

With such examples before us as the powerful Highlanders and islanders, who do not seem to have been specially liable to lung affections other than phthisis while living in their smoky cabins, and with such a robust set of men as we find among our iron-moulders, whose occupation exposes them, for most part of their lifetime, to the almost daily reception of charcoal particles by their lungs, there seems little if any danger likely to arise from a moderate inhalation of a carbonaceous material such as I have proposed. It might be tried on a large scale in hospitals for consumptives, or in cases where only a small amount of tubercular deposit had occurred in one or both lungs, and as a prophylactic in families where a marked tendency to phthisis had been shown.

In Carron Works, where there are both blast-furnaces and iron-moulding shops, the workmen, whether moulders or otherwise, occasionally complain of their breathing being affected by what they speak of as sulphureous vapours from the castings; but in the many other foundries in this district, where the metal is simply remelted, the moulders, as a class, seem not only to escape from phthisis, but to remain fairly free from other chest complaints. They know almost nothing of what used to be, and still is, though to a much less extent than formerly, the special bane of the collier's occupation, spasmodic asthma; and even this does not seem to depend for its production so much on the continuous inhalation of carbonaceous materials as on the confined spaces in which the men work, and the defective ventilation of some pits. These ill-famed pits are mostly well known to the workmen. I have had under my care workmen in the well-ventilated pits who have gone on for many years without a complaint, who, when a strike or something else forced them to remove to an ill-ventilated pit, have come back to me in a few weeks or months with more or less acute attacks, which mostly have ended in spasmodic asthma, or, as they call it, "broken wind."

I have never had occasion to reject the "life" of a moulder, as such, when proposed for insurance, nor have I heard of this having been done by any other surgeon; and I do not think any office would be justified in rejecting such a "life" on the ground that their occupation exposed this class of workmen to the inhalation of carbonaceous particles. With colliers the case is different. Their liability to spasmodic asthma and black-spit forms an objection to their admission into some sick societies, and, no doubt, would do so also, to a certain extent, to the insurance of their lives. Regarding the latter class of operatives, however, it seems pretty clear, from what has been said, both that they are suffering less from the special diseases to which they are liable than formerly, when oil lamps were invariably used and ventilation was much neglected, and also that it is more the peculiarity of their confined occupations, in certain cases, than the carbon inhalations, that renders them specially liable to spasmodic asthma, etc. As to black-spit, of the intensity I have referred to, I have seen none of it except among old colliers who had long used the oil lamps.

Since the foregoing remarks were written I have had but one case which I have thought a proper one for trial of the above-mentioned treatment, of course conjoined with other approved remedies. The case is a chronic one, the upper portion of one lung having, I am informed, been affected for about twelve months. Although, of course, time will be required to try the effects of the treatment, I may mention what I stated to the patient (a girl in service) as the objects I had in view in the management of her case,—1*st*, She had taken cod-liver oil and had been blistered with iodine, and I recommended that the cod-liver oil and nourishing diet should be continued; *2d*, I told her that there existed some ulcers in the lung, which we must try to get healed, and for this purpose I gave her Dr Scudamore's inhaling mixture, to be used thrice daily;[1] and, *3dly*, I furnished her with the bellows and blacking (to be used once daily), for the purpose of trying to prevent the rest of the lung becoming involved in the disease. The inhaling mixture referred to I have long used, and I think, especially in very young subjects, with considerable success. The vapours of the iodine and hemlock, coming into contact with the diseased lung, seem to act as a lotion does to an external ulcer, for I have noticed that, even in bad cases, the sputa secreted usually very shortly decrease considerably. In these cases I have often been reminded of a remark made by the late Professor Alison in his lectures. He used to say that the difficulty in treating phthisis was not so much in healing the ulcers formed by the evacuated tubercles as in preventing the formation of others of the same kind. If the introduction of blacking into the lungs should be found in practice to assist in this respect, it may help to aid cod-liver oil and other remedies, which practitioners now almost universally use. At any rate, I have no doubt it will be found that this little bellows will enable patients to introduce the blacking into the bronchi with the greatest ease, and that its use in moderation will not be found to produce any injurious effects.

When once the blacking has become fairly incorporated with the lungs, it seems to remain there almost permanently. I had occasion, a good many years since, to examine the body of a woman who had been in the pits when a girl, but who had been out of them for thirty years. Nevertheless, the appearance of the lungs was so decided that I at once recognised what had formerly been her employment.

ARTICLE VI.—*Report of a Case of Hydatid Disease of the Liver Successfully Treated by Paracentesis.* By HENRY BARNES, M.D. Edin., Physician to the Cumberland Infirmary.

(*Read at a Meeting of the Border Counties Branch of the British Medical Association, held at Dumfries, October* 29, 1880.)

THE subject of painless enlargement of the liver, due to the presence of hydatid tumour, is one which has attracted much attention, but it is only rarely that we in this part of the country have an opportunity of studying cases of this affection. An examination of the literature of the subject shows that although the ancient physicians

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[1] An excellent inhaler can be made by putting a teaspoonful and a half of the mixture into the little teapot called "a tester," heating this over gas or in boiling water, and inhaling, at intervals, for a quarter of an hour, three times daily. The recipe for the inhaling mixture I use is—Iodine, grs. x.; pot. iod., grs. vj.; ext. conii, ʒj.; spt. vin. rect., ℥j.; aquæ, ad ℥viij. M.

(Hippocrates, Galen, and Aretæus) were familiar with the occurrence of cysts in the liver containing water, they were ignorant of their real nature; and it is little more than a hundred years since the parasitic nature of the disease was first pointed out.[1] It has been reserved for more recent observers[2] to show how the hydatid tumour is due to the development of the ova of a tape-worm, the *Tænia echinococcus.* The tape-worm is only small, being about a quarter of an inch long, and has four joints, the ova being contained in the last. The worms are found in the intestines of dogs and wolves, and the ova, being voided along with the fæces, find their way into the human body in some manner which has not been directly traced, but it is supposed either along with food or drink. When the embryo is liberated from the ovum it bores its way with its hooklets through the coats of the stomach, and then may migrate into almost any organ of the body, but usually shows a preference for the liver. There its development proceeds, and it produces a scolex, which is called the *Echinococcus hominis,* and this becomes enclosed in a cyst containing a fluid with certain peculiar chemical characters to be afterwards described. These cysts may go on enlarging for long periods, but rarely have any tendency to spontaneous cure. It has been found that the ova of the *Tænia echinococcus* develop hydatid tumours in other animals than man, and especially in sheep; and Dr Thudichum[3] calls attention to the fact that the ova may sometimes be dangerously propagated. In the human subject the hydatids either accompany their victim to the grave or are destroyed by the efforts of treatment. In sheep, however, they are set free by slaughtering, and may be devoured by dogs, to be again developed into tape-worms. Hence it becomes necessary for their prevention in man that dogs should be banished from slaughter-houses, and prevented from feeding on the offal of sheep, and that "dog's meat" should be thoroughly boiled. These precautions become all the more necessary where the disease is of common occurrence, as in Iceland, where it is said that one-sixth of the entire population are afflicted with it. In the United States of America and India hydatid tumours appear to be rare, but in Australia they are very common. Their prevalence also varies in different districts of the same country. Frerichs states they are more common in Breslau and Silesia than in Göttingen, Kiel, or Berlin, and in France they are said to be more common at Rouen than in Paris. In London, Murchison states that, out of 2100 autopsies at the Middlesex Hospital, hydatids were found in only 13, or 1 in 161 cases, but in only 7 cases were they the cause of death. Out of many thousand post-mortems which Gairdner[4] performed or saw performed in the Edinburgh Royal Infirmary, a hydatid tumour was only found once. Searching the records of the

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[1] Pallas, *De Infectivis viventibus intra Viventia,* 1760. [2] By Bremner, in 1821.
[3] In *Seventh Report of Med. Off. of Privy Council,* 1865.
[4] *Clinical Medicine,* p. 431.

Glasgow Royal Infirmary from the earliest period, Dr Scott Orr[1] only found three cases, twice in the liver and once in the lung. Looking through the statistical tables of disease published by the Cumberland Infirmary and the Carlisle Dispensary, the name of this disease is conspicuous by its absence. The former institution publishes tables containing the diseases of patients admitted from 1841 to 1879, and the latter commenced to publish tables in 1825, but suspended their publication after six years had elapsed, and did not resume their publication until 1845; since then yearly records have appeared. Failing to find any mention of the disease in any of these records, I think I am entitled to assume that the disease is at all events rare in that part of Cumberland of which Carlisle forms the centre, and especially so as the two institutions named are the two chief medical charities of the district, and the number of patients yearly treated under their auspices is counted by thousands. Under these circumstances I have thought that a few brief notes and comments on a case which recently came under observation might be of some service. The case is as follows:—

Ellen G., æt. 14, residing at Maryport, was admitted into the Cumberland Infirmary under my care on 28th May 1879. In appearance the patient seems fairly well nourished, but is pale, and looks younger than most children of the same age. She is a native of, and has never been out of the county. There is no history of any previous severe illness, and it is stated that she enjoyed fairly good health until about a year ago, when, in consequence of her dress being too tight for her, an examination revealed some enlargement of the abdomen. There had been no pain, and the patient had continued to go to school until a few weeks before admission, when she was obliged to cease owing to the difficulty she experienced in walking, and also owing to the fact of her large abdomen being noticed and commented on by other children. She was then taken to see Dr Little of Maryport, who recommended her to the Cumberland Infirmary. There is no hereditary tendency to disease in the family. The patient is one of fifteen children, seven of whom are now dead, but the deaths have mostly occurred in infancy. There have been four children younger than Ellen, but three of them died.

On examination of the abdomen the hepatic dulness was greatly increased, and it seemed as if the abdominal cavity were occupied by a large tumour, which was uniformly dull on percussion, and the bowels were pushed down by it. In the mesial line the dulness extended from the midsternal region to the umbilicus, and from the nipple on the right to a horizontal line on a slightly lower level than the umbilicus. There was tympanitic resonance in the right flank. The greatest prominence was midway between the sternum and the umbilicus. On palpation the free sharp edge of the liver could be felt at the lower line of dulness, and, tracing this edge to the umbilicus, the notch or hilus which divides its right from its left lobe could be distinctly made out.

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[1] *Glasgow Medical Journal*, 1876.

There is distinct fluctuation above and a little to the right of the umbilicus, but the fluid seems to be confined in a very tense sac. The fluctuation is most distinct about two inches below the cartilages of the ribs, on the right side, and about three inches from the middle line. There was no hydatid fremitus. The following measurements were taken:—

Circumference	at mammary line, .	28 inches.
„	at lower end of sternum,	29 „
„	midway between sternum and umbilicus, .	32 „
„	at umbilicus, . .	31 „

The general appearance of the tumour is well shown in the plate. There were no other symptoms in the patient's condition worthy of note. It was the size of the tumour and the difficulty experienced in walking which caused her parents to seek for help. As all the indications pointed to the existence of a cystic tumour of the liver, and as experience teaches us that nothing is to be gained by internal medication in such cases, I proceeded on 3d June to use the aspirator. About 88 oz. of pale yellow fluid was drawn off through a fine trocar. This had a specific gravity of 1009, was neutral to test-paper, contained abundance of chlorides and a trace of albumen. On microscopic examination no trace of echinococci could be detected, but there were abundant blood-discs. The sac was not entirely emptied, and care was taken, in withdrawing the trocar, to prevent any overflow from the sac into the abdominal cavity. The measurements after the operation were:—

At the mammary line, ...	26½ inches.
„ lower end of sternum, . . .	28 „
Midway between sternum and umbilicus,	28½ „
At umbilicus, ...	28 „

No bad symptom followed the operation, but in the course of a few days it was observed that the cyst was rapidly refilling, and on the 12th it was evident that the tumour was even larger than before. The aspirator was again used, and 100 oz. of fluid removed, which presented the same general characters as that removed on the first occasion, but was now deeply stained with bile. On the 15th the cyst is noted as again getting larger, the circumference at the umbilicus being 32½ inches. On the 21st, the tumour being as large as ever, and there being no pain or other bad symptom, and no sign of the tumour getting less, I again used the aspirator, drawing off 96 oz. of fluid deeply stained with bile, and containing shreds of membrane. After a diligent search under the microscope I discovered a single hooklet, and in the same evening the house-surgeon, Mr W. H. Beverley, on examining some of the membranous shreds, discovered an echinococcus which had resisted the

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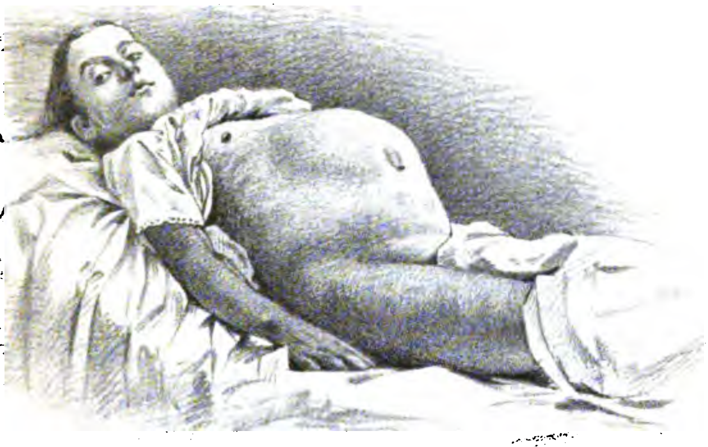
OBSERVATION



action of the bile; he found it standing out clear in the midst of a deeply coloured membrane. After this operation the cyst never filled again so completely, and in the course of a few weeks the tumour was decidedly smaller and the fluctuation less distinct. The patient's general health improved, and when she was discharged on 27th August no fluctuation could be discovered, although the liver dulness was greater than normal. On 13th June 1880 the patient came to report herself at the hospital. She was looking remarkably well. The circumference at the umbilicus was 29 inches, and the hepatic dulness was normal. She had never ailed anything since she left the hospital.

There are several points in this case deserving a few words of comment:—

1. *Its rarity in Cumberland.*

2. *The Age of the Patient.*—Most writers agree that youth and old age are the periods when the disease is least likely to occur, and in the middle period of life it is the most common. This patient was fourteen years old. In the work of Dr Davaine,[1] which Trousseau characterizes as the most complete treatise on the subject which has appeared, the author has only been able to collect fourteen cases in subjects under fifteen years of age. Half of the fourteen were cases of hydatid tumours of the liver developed in persons of twelve, ten, nine, and four years. In one case, which is quoted from Cruveilhier, the subject was a child of only twelve days old, in which the debris of the cyst were found to have opened into the descending colon. In the tables of cases, collected mostly from British sources, and published by Murchison,[2] there appear 103 cases where the disease affected the liver. The age is not mentioned in eight cases; in two it is stated as "young;" in sixteen the patients were under fifteen years; in the remainder the age varied from sixteen to sixty-one years.

3. *The Size of the Tumour.*—In this case, where the patient's powers of locomotion were hindered, I think we may say it was very large. In Murchison's cases it is only mentioned as very large in eight cases, and none of these were children. The quantity of fluid removed is an uncertain guide as to the size of any given tumour, as the practice of different authors varies. Some remove only a portion, and others remove nearly the whole of the fluid contents of the cyst. In some of the cases tabulated the amount removed was only four or six ounces, and in others it amounted to 120, 160, or 180 oz.

4. *The absence of Hydatid Vibration.*—When this sign is present it is looked upon by Trousseau as one of great value and pathognomonic of the disease. It was first described by Dr Briançon and Piorry in 1828, and may be produced in different ways. Davaine

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[1] Davaine, *Traité des Entozoones et des Maladies Vermneuse de l'Homme et des Animaux domestiques.*

[2] Murchison's *Lectures on Diseases of the Liver.*

recommends that the three extended fingers of the left hand be applied over the most prominent part of the tumour, and that the middle one be struck abruptly by the middle finger of the right hand. Frerichs says it is felt most distinctly when the tumour is gently compressed by two fingers of the left hand and struck abruptly by the right hand, or when the finger is allowed to rest for a moment upon the pleximeter after percussing. He only found it in about half his cases. Murchison says it is elicited when any large cyst with thin tense walls and watery contents is percussed in the manner described; but inasmuch as the only tumours of the liver answering to these characters are hydatids, when present it is a sign of considerable value. It is, however, absent, he says, in a large proportion, probably a majority, of the cases. Heller, in Ziemssen's *Cyclopædia*, vol. iii., states that the sensation of hydatid fremitus may be illustrated by resting three fingers loosely on the spiral spring of a sofa, and then tapping with the middle one.

5. The character of the fluid removed helps in the diagnosis, even although no echinococci be found. It is clear, colourless, or slightly opalescent; has a low specific gravity, 1009 (or from 1007 to 1015); in most cases is neutral, but not unfrequently has an alkaline or acid reaction. It is usually non-albuminous, except when mixed with blood, and it contains abundance of chlorides, as shown by throwing down a dense white precipitate with nitrate of silver. These characters apply to no other fluid in the body, whether healthy or morbid.

6. The diagnosis in this case did not present any great difficulty. The diseases which may most readily be confounded with hydatid tumours of the liver are said to be abscess, distended gall-bladders, effusion into the right pleura, cancer, cystic tumour of the kidney, phantom tumour, and ovarian cyst. The only one of these with which one might have fallen into error was a renal cyst, but the absence of the colon from the front of the cyst, and the presence of it on the right flank, and the being able to feel the lower edge of the liver at the lower margin of dulness, seemed to me to put cystic tumour of the kidney quite out of court.

7. The prognosis is generally admitted to be grave when the tumour has reached a large size. According to Frerichs, a favourable termination from the spontaneous death of the echinococci only occurs in such cases as are never recognised during life on account of their small size. The risk in this case was of rupture into the peritoneal cavity, an event which almost invariably terminates fatally.

8. *The Treatment.*—This is a point upon which there are considerable discrepancies of opinion. Some authors have believed that remedies taken internally pass into the cysts and kill the echinococci, but I have not been able to find any case in which such plan of treatment has proved successful. Calomel, common

salt, and iodide of potassium have been recommended; but cases are recorded by Murchison and others in which no trace of iodine could be detected in the hydatid fluid removed from patients who had taken iodide of potassium for many weeks. The removal of the fluid from the cyst is the only certain way of killing the parasite and thus curing the disease. Various methods of doing this have been proposed. The simplest plan is that by simple puncture, and this may be looked upon as comparatively free from danger when there are such adhesions between the surface of the cyst and the parietal peritoneum as will effectually prevent the escape of any of the fluid into the peritoneal cavity. Unfortunately it is not easy to say whether such adhesions exist or not. I examined my patient many times, but I am not able to speak definitely on this point. Another danger from simple puncture is suppuration of the sac from the admission of air. This latter difficulty may be obviated by the use of the aspirator, but objections have been raised by some to the use of this instrument on account of the pain caused by the suction action, and the risk of drawing blood along with the fluid. In the three operations on my patient no pain was experienced beyond that produced by the prick of the fine trocar, and only a very small quantity of blood was found mixed with the fluid. How much fluid we should remove in such cases is rather a disputed point. Some go the length of almost emptying the sac, while Murchison asserts that it is enough to remove from one-half to two-thirds of the fluid contents. In my case I did not quite empty the sac, but removed rather more than two-thirds of its contents, as it seemed to me that the more I removed the less would be the risk of overflow into the peritoneal cavity, as I was by no means certain of the existence of adhesions. The risk of completely emptying the sac is said to be the rapid outpouring or oozing from the vessels forming the walls of the sac, and the consequent risk of inflammation. In regard to the second operation, it is interesting to note the admixture of the fluid with bile. It is well known that the presence of bile in the fluid is fatal to the continued existence of the echinococci, and a knowledge of this fact has led to the proposal to inject such cysts with biliary fluid. Several successful cases of this treatment have been recorded. It is possible that the third operation might have been avoided if one had continued to wait sufficiently long. The bile would probably have killed all the echinococci, and the cyst would have contracted; but having waited ten days, and seeing no signs of any diminution in the tumour, I am not disposed to regret the operation, more especially as it enabled me to discover traces of the echinococcus which had resisted the action of the bile, and thus place absolutely beyond dispute the correctness of the diagnosis. There was never any bad symptom; and I have this week heard that the patient is in excellent general health, plump and fat.

ARTICLE VII.—*Lecture on Cyanosis.* By BRYAN CHARLES WALLER, M.D., F.R.C.S. (Ed.), Lecturer on Pathology in the Edinburgh School of Medicine.

GENTLEMEN,—The rare and interesting condition of cyanosis, to which I invite your attention to-day, derives its name from the peculiar objective symptoms manifested during life by its unfortunate subjects. The general term cyanosis signifies a livid bluish or purplish discoloration of the surface of the skin, and more especially of the lips, ears, toes, and fingers. In its most marked and permanent forms it occurs as a combined result of certain malformations and morbid conditions of the central organs of circulation, giving rise to admixture of arterial and venous blood, together with certain other conditions of obstruction, which oppose the free passage of blood through the heart and lungs, and occasion general congestion of the venous system. But I must ask you to bear in mind that, besides these permanent organic lesions, anything which seriously interferes with the proper circulation and aeration of the blood, causing venosity of the arterial system together with engorgement of the venous portion of the circulatory apparatus, will give rise to a temporary cyanotic appearance of the external surface. Thus during an epileptic attack, the face and extremities change to a livid hue; but this symptom vanishes as soon as the fit is over and the normal balance of the circulation is once more restored. Again, conditions of grave obstruction to the pulmonary circulation from morbid states of the lungs themselves, such as double pneumonia, sometimes give rise to a transient cyanosis; but this also disappears as the lung mischief subsides, and the patency of the pulmonary capillaries is restored.

You will accordingly perceive that cyanosis or lividity of the skin is a secondary condition consequent on some primary cause; and this fact, if retained in your memory, will enable you to understand how it may be determined by a number of different anatomical conditions of malformation and disease, as well as, in the case of epilepsy, by certain transient disturbances of a functional character.

We shall discuss the several conditions of temporary cyanosis when we come to speak of the various morbid states to which they owe their origin. In this lecture we shall confine our attention to the cyanosis *par excellence*, or morbus cæruleus, consequent on malformation and organic change of the heart and great vessels. This cyanosis is permanent, and appears to depend on two principal co-existing conditions—*firstly*, some congenital malformation or "developmental atrophy" of the heart or great vessels, permitting an admixture of arterial with venous blood; and, *secondly*, some condition of obstruction to the passage of the blood, either through the pulmonary artery to the lungs, through the lungs themselves, or through the left side of the heart and aorta into the systemic vessels.

Before proceeding to enumerate the several malformations connected with cyanosis, and to explain the mechanism by which each acts as a determining agent in its production, let us glance for a few moments at the plan of the circulation in some of the lower vertebrates. This survey will enable us to understand more clearly the results entailed by developmental failures affecting the human cardiac organ, of which the hearts of fishes, amphibians, and reptiles are rudimentary antitypes. We shall thus see that several of those abnormal conditions which are productive of cyanosis in man are normal and natural in the case of animals occupying a lower position in the scale of organization; and we shall accordingly be enabled to view them in their proper light as "retrograde developments," or instances of that curious propensity of nature which occasionally prompts a return from higher and more complex forms to simpler and more primitive ones.

In Fishes, as some of you are probably aware, the heart consists of a sort of straight tube with three saccular dilatations. The lowest of these dilatations is called the sinus venosus, or auricle, and receives the blood as it returns to the heart after its passage through the peripheral vessels. The middle dilatation is known as the ventricle, and into it the blood passes when driven onwards by the systole of the auricle. The third dilatation, which in some kinds of fishes is contractile, is known as the bulbus arteriosus, and corresponds to the base of the aorta in the human being during extra-uterine existence. The systole of the ventricle, aided by that of the bulbus arteriosus, when the latter is contractile, drives the de-oxygenated blood through the branchial artery to the gills, where it becomes aerated by contact with the oxygen of the water. From the gills the aerated blood is conveyed to the peripheral parts by means of a large vessel analogous to the aorta of higher vertebrates. It will thus be seen that the piscine heart contains venous blood only, and corresponds merely to the right side of the heart of a bird or a mammal. It is, in fact, simply a respiratory heart, though the force of its systole is sufficient not only to drive the blood to the gills for aeration, but also to complete the circulatory round through the general vessels of the body, and so back again to the heart.

In the adult Amphibia and in the Reptilia there is a further division into three cavities by a partitioning of the auricle into two distinct chambers. In these animals the right auricle receives the systemic veins, while the pulmonary veins return the aerated blood from the lungs into the left auricle. Both auricles open into a single ventricle, in which the venous and arterial blood becomes mingled together. From this single ventricle spring both an aorta and a pulmonary artery, so that by the ventricular systole the arterio-venous blood is driven into the systemic vessels by the former, and into those of the pulmonary circulation by way of the latter. Thus the pulmonary artery and systemic vessels are alike supplied with arterio-venous blood, and this imperfect aeration of the vital fluid gives rise to the low temperature and cold-blooded nature of the members of these two important groups of the animal kingdom. In the Crocodile the heart consists of four distinct cavities, but the pulmonary artery and aorta communicate with each other immediately above their respective origins by means of an aperture known as the *foramen Panizzæ*, which corresponds more or less closely to the ductus arteriosus in fœtal mammals; so that in this animal there is still an admixture of venous with arterial blood both in the aorta and pulmonary artery, though probably to a much smaller extent than in cases where the vessels in question spring from a single cavity.

Now, in the human embryo the heart consists at first of a straight contractile tube with three dilatations, as in Fishes: then the two ends of this tube become approximated to each other, and the heart assumes a sort of horse-shoe shape, with the convexity downwards; the apex of the convexity being formed by the single ventricle, while the bulbus arteriosus and sinus venosus are situated superiorly, and constitute the two ends or heel portions of the shoe. From the bulbus arteriosus springs the aorta, with the innominate artery and the left carotid and subclavian arising from it; also the common trunk of the pulmonary artery, which divides into right and left to supply the lungs, and likewise opens into the descending portion of the aortic arch by means of the ductus arteriosus. At the other tip of the horse-shoe the vena cava opens into the sinus venosus or auricle. The two tips or heels of the horse-shoe then become approximated to each other, and the heart forms a loop, with the bulbus arteriosus situated anteriorly with relation to the sinus venosus, which lies posteriorly. The heart still consists of the same three cavities, namely, the ventricle bent upon itself, the bulbus arteriosus, and the sinus venosus. But a septum now begins to develop in the curved ventricle, growing from the apex upwards, and after a time becoming attached to the base, and thus divides the heart proper into three distinct cavities—an auricle or sinus venosus, and two ventricles, besides the bulbus arteriosus. Simultaneously with the development of the ventricular septum, the common pulmonary trunk grows, as it were, downwards along the anterior surface of the bulbus arteriosus, and thus comes into communication with the newly-formed right ventricle. In the human embryo the ventricular septum begins, according to Meckel, to develop as early as the fourth week of pregnancy, and is complete at the expiration of eight weeks. A septum next begins to form in the sinus venosus or auricle, and grows as a semilunar fold proceeding from above downwards. The septum increases in size until the sinus venosus is divided into two distinct auricles, which, however, communicate with one another through the foramen ovale, a hole in the septum which remains patent until the beginning of extra-uterine life, in accordance with the plan of the fœtal circulation. Soon after birth it closes and disappears, in common with the ductus arteriosus and ductus venosus, the temporary purpose of these structures being now at an end. During fœtal existence the bulbus arteriosus becomes converted into the root of the aorta, and with the closure of the foramen ovale the heart assumes its permanent anatomical characters.

We thus see that the human embryonic heart at first resembles that of a fish; were the development of the ventricular septum to fail, it would then resemble that of an adult amphibian or a reptile; so also, though to a less degree, were the foramen ovale to remain permanently open; and, lastly, were the ductus arteriosus to continue patent, the state of matters would very much resemble that seen in the crocodile. Now, all these developmental failures, and a number of others which I am about to describe, do actually occur; and, in conjunction with certain obstructive conditions which are partly concurrent with the malformations, and partly also directly causatory of them, give rise to those essential conditions which issue in the development of cyanosis.

The other developmental malformations which I have just mentioned are rare, and we may accordingly dispose of them somewhat shortly. They are as follows:—

Occasionally the relative positions of the aorta and pulmonary artery are transposed, the aorta arising from the right ventricle, and the pulmonary artery from the left. Thus, after birth, a continuous circulation of oxygenated blood is maintained between the heart and lungs, and an equally continuous circulation of venous blood traverses the systemic capillaries. This condition is obviously incompatible with the long duration of extra-uterine existence; though there is one remarkable instance on record of a child which survived for two years and eight months, but in this case the foramen ovale was widely patent. In the museum of the Royal College of Surgeons of Edinburgh there is a specimen (1074, xxiv. B), consisting of the heart of a child five weeks old, which exhibits this malformation. Here both the foramen ovale and ductus arteriosus are open.

Sometimes the aorta and pulmonary artery both arise from a single ventricle, which may be either the right or the left. This malformation is probably due to displacement or imperfect formation of the septum. In some cases the aorta arises from both ventricles. Specimens 1066, xxiv. A., 1069, xxiv. B., and 1072, xxiv. B., in the museum of the Royal College of Surgeons of Edinburgh are examples of this condition.

In other cases the right or left ventricle is small and undeveloped as compared with its fellow. This is probably the result either of displacement of the septum or of inflammatory thickening and contraction during fœtal life.

Again, the pulmonary artery may be congenitally of small size and inadequate to the task of conveying a sufficient quantity of blood to the lungs. Lastly, the aorta may be constricted, either at its origin from the left ventricle or in that portion known as the *isthmus aortæ*, which intervenes between the origin of the left carotid and subclavian arteries and the point of junction of the ductus arteriosus with the descending part of the arch.

All these conditions may play a principal part in the production of cyanosis; but the three first, namely, patent foramen ovale, opening in the ventricular septum, and permanent ductus arteriosus, are perhaps the most frequent and the most important.

Yet though these malformations one and all imply a certain amount of admixture of arterial with venous blood, you should be careful to guard against the idea that the existence of one or even of two of them necessarily implies the development of cyanosis. So far is this from being the case, that by the time you have made one or two thousand post-mortem examinations you will probably have met with a hundred or so of hearts which exhibit these defects, whereas possibly not a single one of the patients from whose bodies they were taken was cyanotic during life. For instance, in 155 post-mortem examinations of non-cyanotic subjects, Bizot found the foramen ovale more or less patent in no fewer than 44. I myself have found the same condition in 13 cases out of 100. Several of the specimens in this collection of malformed hearts which I have placed on the table before you serve to illustrate the same fact. Here, for instance, is one in which the foramen ovale is so widely patent that the organ is practically uniauricular. Let us examine this specimen a little more closely. All of you will perceive without difficulty that it is considerably hypertrophied. In its fresh state it weighed 14 ounces, whereas the average weight of the normal heart of an adult man may be stated as being about 10½ ounces, or perhaps a trifle less. All the cavities are likewise proportionately enlarged, and the thickness of the ventricular walls is evidently increased. The interventricular septum is perfect, but that between the auricles is merely indicated by a sort of ridge. The mitral, tricuspid, aortic, and pulmonary orifices are all normal. The body from which it was taken was that of an adult male, aged about 30 years. The physical development was good, and death occurred from causes unconnected with cardiac lesion. During life there was no cyanotic appearance of any part of the external surface.

Here, then, we have an instance of the perfect compatibility of the existence of a large aperture of communication between the opposite sides of the heart with the preservation of the normal hue of the complexion.

Here, again, is another heart. There is an opening near the base of the septum ventriculorum large enough to admit of the easy passage of this pencil. The valvular orifices are all normal.

I am not acquainted with the historical details of the case, but cyanotic symptoms were said to have been entirely absent.

Here is the heart of a child of three years old. The foramen ovale is open; the ductus arteriosus will admit the passage of a bristle, but the heart is otherwise normal. There was no cyanosis.

On the contrary, here is a heart in which the foramen ovale is open. You will observe that the organ is dilated and enlarged, and those of you who are nearest to me will doubtless also notice that this enlargement is more marked on the right side. The mitral valve is normal; the aortic valve is also pretty normal, and is competent, though a trifle thickened; the tricuspid valve is dilated; while the pulmonary valve is so much stenosed as not to admit the passage of my little finger. The cavities on the right side of the heart are dilated. There was marked lividity of the countenance during life.

(*To be continued.*)

ARTICLE VIII.—*Case of Vesico-Vaginal Fistula and Loss of Uterus.* By RODERICK MACLAREN, M.D., Surgeon to the Cumberland Infirmary.

ON the 14th of last April Mrs M. was admitted to the Cumberland Infirmary. The story she told about herself was, that nine years ago in Newcastle, she had a very bad confinement (her fourth), that the child was delivered with instruments, and that she was very seriously ill for some weeks. Three or four days after the birth of the child her urine began to dribble away without any control, and it has continued to do so ever since. From the date of the commencement of her pregnancy menstruation has never returned. Owing to the extreme tenderness of the vagina and labia from the irritation caused by the urine, no satisfactory examination could be made until she was placed under chloroform. When this was done a catheter was passed along the urethra, the inner end of which was thus ascertained to open into the vagina. A speculum was next passed along the vagina, and brought into view the mucous membrane of the bladder filling the upper end—showing that the base of the bladder was absent, and that the opening was of the full calibre of the vagina. The examination was next directed to ascertain the relation of the uterus to the bladder-opening. At first I thought the os and cervix were in the position where they ought to be; but a sound would not pass, and subsequent stretching showed that I had mistaken a dimple in the vaginal mucous membrane for the os uteri. I then examined by passing one finger into the rectum and another into the vagina, and again by placing a finger of one hand in the rectum and the other hand on the abdominal wall. In no way could any uterus be felt. On a subsequent occasion, when showing the case to my colleagues in the hospital and some other medical friends, I was able to pass a probe for a couple of inches into one of the ureters, and when she was under chloroform for operation the other was demonstrated in a like manner.

Mrs M. had mentioned that the gentleman who attended her in her confinement had called in Dr Arnison of Newcastle. I wrote to him about her, and by his permission I insert the account of her case which he most kindly sent me.

"A late friend came one Saturday night and asked me to apply the long forceps in this case, he having been in attendance, I believe, thirty-six hours or more. I applied the forceps above the brim, and without much difficulty I delivered her of a child which bore marks of having been some time dead. The placenta was expelled in due time, and then flooding came on. Ordinary means, such as cold douche, cold injections, and pressure, failed to check it, and she threatened to sink, the womb refusing to contract.

"Dr Barnes had not long previously proposed intra-uterine injection of perchloride of iron in such cases; and although it is a much debated question, that undoubtedly saved her life. I injected a diluted solution with an ordinary enema, carrying the nozzle well into the uterus, and the bleeding was at once controlled. The womb, however, did not contract, so I passed an electric current through it by placing one pole on the belly, taking the other in my right hand, and passing the left up the fundus. There was very little effect produced, and as bleeding had practically ceased I left her in the small hours of Sunday morning, scarcely expecting her to live two hours. My friend being in attendance, I did not see her again, but I never heard of anything unusual in her recovery except the incontinence which came on as sloughs separated. I cannot undertake to say what has become of the uterus, but I can vouch for it she had one when I left her. I had my hand in it, and will not readily forget the sensation—no proper contraction, but from the perchloride injection the interior felt dry and rough, like the inside of an undressed leather bag. I not only had my left hand in it, but I had my right hand grasping it from the outside."

On *April* 30, 1880, she was placed under chloroform, and a ring of mucous membrane, about half an inch in breadth, was removed from the vagina, as high up as possible. While this was being done the bladder was kept out of the way of the knife by filling it with sponge passed into it by the vagina. The paring was a tedious, troublesome proceeding, from being so far up, and from the bleeding. When it was completed the sponge was withdrawn, and silver wire sutures passed so as to bring the raw surfaces in contact. The lateral surfaces seemed to drop together most easily, so the sutures were passed from side to side. A catheter was then inserted into the bladder through the urethra, and the patient made to lie on her face until the sutures were withdrawn. The result of this operation was considerable narrowing at the inner end of the vagina, so that a distinct ring could be felt where the mucous membrane had been removed. The patient agreed to a repetition of the operation, which was done on June 18th. The vagina was pared in a similar manner, but the sutures were so placed as to bring the front in contact with the back, the contraction having so altered the relation of parts that this seemed the best way of closing the opening. After the sutures were twisted free incisions were made through the mucous membrane in front of and parallel to the wound, with the object of relieving tension on it. The result of this second operation was, that it so far narrowed the opening as to leave it just large enough to admit a thumb. I wished to operate again, as I thought the results of the two operations were sufficiently marked to make it probable that by perseverance the opening might be quite closed, but the patient's faith or courage failed, and she declined further interference. Of course, her condition, so far as she could appreciate it, was in no way changed by what had been done for her; and I have no doubt that it was very disappointing to her that urine still dribbled away as constantly as before her admission. Much of the interest of this case centres round the absent uterus. That it is really absent there can be no doubt. Her history is thoroughly in accord with this—no menstruation, no menstrual molimen, since the confinement. Then physical examination several times repeated, and by different people, failed to find anything in the pelvis which had the least resemblance to a uterus, and careful exploration of the vagina proved the absence of any opening which could have been an os uteri. Several explanations of this occurred to me, but each in turn presented insuperable difficulties, except one, viz., sloughing of the uterus. My first idea was that there had been inversion of the uterus, and that it had been removed; but Dr Arnison's account proved that there had been no such accident at the time of delivery, and the patient's statement was most distinct that it had not occurred afterwards. Then, could there be a uterus shut off by cicatricial contraction? In such a case not only should it have been detectable by the finger, but accumulated menstrual fluid should have caused a pelvic tumour. Next, was it possible that sloughing had been followed by atrophy of the uterus? Against this it was to be said that no evidence of *any* uterus could be found, and that not only was menstrual flow absent, but the monthly molimen did not occur—strong presumptive evidence that the ovaries and uterus had shared the same fate. The only obstacle in the way of a belief that gangrene of the uterus had occurred is the extreme improbability of recovery from such a condition; but this does not seem to one in itself a reason to reject it, for it must have happened to most men to see an occasional recovery from lesions which are usually of the most hopeless character. The large opening in the bladder was evidence that great sloughing had occurred, and it appears not unlikely that the uterus had already lost its vitality at the time of delivery, accounting for the condition so graphically described by Dr Arnison—"no proper contraction, but from the perchloride injection the interior felt dry and rough, like the inside of an undressed leather bag."

I have not been able to find a record of any similar case. The nearest approach to it is one reported by Dr Walter Whitehead (*Brit. Med. Journal*, Oct. 12, 1872). Her age was thirty-nine; she had not menstruated since the birth of her fourth child, eleven years before. At that confinement the placenta was adherent, and flooding followed its removal. Her convalescence had been slow; she could not stand at the end of eighteen weeks. On examination, no cervix or uterus could be detected, but an irregular opening in the position of the os uteri. A sound passed through for eight inches, apparently into the abdominal cavity. Bimanual examination by rectum and pubes, and an examination by the finger in the rectum and a sound in the bladder, confirmed the absence of the uterus.

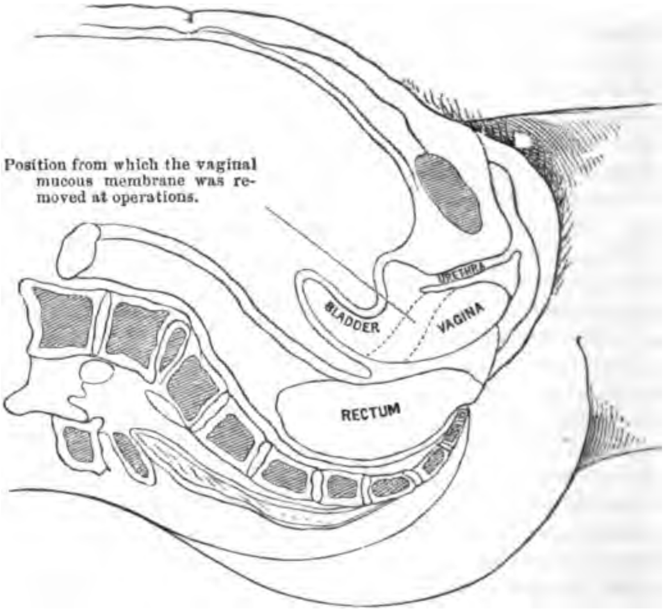

Position from which the vaginal mucous membrane was removed at operations.
URETHRA
BLADDER
VAGINA
RECTUM

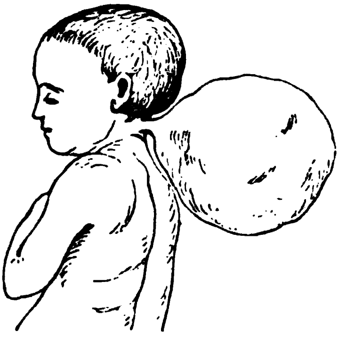
Diagram illustrating the condition of the Pelvic Organs and the Operation.

ARTICLE IX.—*Meningocele.* By J. W. ANDERSON, M.A., M.B., C.M., Edinburgh Royal Infirmary.

ON 24th December 1880, Mrs M., after a labour which was stated to have been tedious and difficult, in which, unfortunately, she was attended by a midwife, gave birth to a fairly developed mature female child. The advent of the child gave rise to some alarm when it was found to have a large tumour connected with the back of the neck, and my father was called in to see it. He found the tumour to be about the size of a cocoa-nut, of a pinkish colour on the surface, presenting well-marked fluctuation to the touch, and hanging by a very short pedicle of about an inch in thickness, somewhat flattened over the shoulders. The pedicle was connected with the neck about the level of the arches of the two first vertebræ. It was not tested whether the tumour could be emptied by compression, to any extent, of its contents. A strong ligature was drawn tightly round the pedicle at once, the tumour protected from pressure and friction, and an antiseptic wash used to keep down fœtor. After the ligature was applied the tumour became more tense, globular, and erect, so that it came to be in contact with the occiput.

In the course of the following week the epidermis peeled off, the surface assumed a reddish-brown, raw appearance, and slight hæmorrhage took place from eroded veins on the surface. The child rapidly lost flesh, and remained in a state of constant fretfulness, but without having convulsions or other nervous symptoms beyond the frowning aspect so common in infantile cerebral disorders.

On 31st December I saw the case for the first time along with my father. It then had the appearance accurately represented in the following sketch. It was decided that we should remove the tumour with the knife, without waiting for the ultimate effects of the ligature. Accordingly a fresh ligature was applied to the pedicle to guard against any hæmorrhage, as the first one had already eaten its way through the skin on the under surface, and had become slack. The cyst was then evacuated, by means of a trocar and canula, of sixteen fluid ounces of a dark reddish-brown, grumous fluid (these characters probably from the effects of the first ligature), and the pedicle severed, immediately on the distal side of the ligature, with one sweep of the knife. Very slight oozing of blood followed from the centre of the pedicle, which was checked on further tightening the ligature; but, to avoid risks, the surface was touched with the actual cautery and dressed with a simple antiseptic lotion. The pedicle was composed of firm fibrous tissue, and through its centre passed the tubular canal of communication between the cyst and the cranial cavity, large enough to admit a surgical probe. The walls of the



cyst were of considerable thickness (from one to two lines), but varying slightly in different parts. (Wishing to preserve the tumour entire, I did not examine the lining membrane.)

31*st* (*vespere*).—The child has cried less since the operation than it has done for some days, and has slept. Skin around the pedicle on the under side has given way, and the surface becoming purulent; the exposed part encroaching upon the canal of communication in the pedicle.

1*st January* 1881.—The child has remained in a torpid condition since last night, refusing the breast. The eyes are heavy, dim, and vacant; pupils slightly and equally contracted. Brow smooth; no crying. During the rest of the day the torpor deepened into coma, and after slight convulsions the infant died.

Post mortem examination not allowed, but I managed to pass a probe along the canal, now quite exposed below the base of the pedicle where the ligature had eaten through it, and found it to take an oblique course upwards and forwards, through the position which should have been occupied by the arch of the atlas, right into the cranial cavity, no force being used to make it take this direction.

I have communicated these notes, 1st, on account of the rarity of such cases; 2d, because of the treatment and its result. Repeated tapping of the cyst is a method which holds out no hope of cure, the result being to drain away the cerebro-spinal fluid, and merely prolong the lingering death. The only chance we can give the child is to remove the tumour early, taking precautions to keep the section strictly antiseptic, and to avoid that exposure of the canal of the pedicle which, in this case, was probably the cause of death by, *first*, allowing the cerebro-spinal fluid to drain away, and, *secondly*, permitting the absorption of septic or irritating matter into the cranial cavity. The operation has succeeded, as in the case operated on by Professor Annandale, quoted in Erichsen's *Surgery*.

ARTICLE X.—*Clinical Lectures on Intra-Cranial Tumours.* By BYROM BRAMWELL, M.D., F.R.C.P.E., Lecturer on the Principles and Practice of Medicine and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh; late Physician and Pathologist to the Newcastle-on-Tyne Infirmary; formerly Lecturer on Clinical Medicine and on Pathology in the University of Durham College of Medicine, Newcastle-on-Tyne, etc., etc.

LECTURE II.

IN my last lecture, gentlemen, I described to you the symptoms which are characteristic of cerebral tumours irrespective of their position. To-day I propose to direct your attention to some symptoms which result from the presence of tumours in particular parts of the brain, or cranial cavity. These symptoms are commonly termed "localizing," because they serve to indicate the position of the growth.

Let us, then, in the first place, consider the *alterations in the motor nerve apparatus* which may be caused by the presence of an intra-cranial tumour.

Spasms and *paralyses*, the symptoms which result from alterations in the motor nerve supply of muscles, are of frequent occurrence, and, from an anatomical and physiological point of view, are the most interesting of all the symptoms.

An intra-cranial tumour may be regarded as a foreign body which, as soon as it attains to sufficient size, presses upon and injures nerve tissue.

The symptoms which result from the pressure of a tumour on *motor* nerve tissue depend upon—

1. The function of the particular portion of motor nerve tissue which is injured, *i.e.*, upon the position of the tumour.
2. The manner in which it is injured, viz., whether it is irritated, or destroyed.
3. (In the case of destroying lesions) the *rapidity* of the destruction.

1. *The Position of the Tumour.*—In order that you may thoroughly understand the important influence which the position of the tumour exercises upon the symptoms (the extent and distribution of the resulting spasm or paralysis), allow me very briefly to direct your attention to the arrangement of the motor nerve tract within the encephalon.

Recent researches, more particularly the clinical researches of Dr Hughlings Jackson on the human subject, and the experimental researches of Hitzig, Ferrier, and others on the lower animals, go to show, that the convolutions in the neighbourhood of the Fissure of Rolando (more especially the ascending frontal and ascending parietal convolutions) are concerned in the production of voluntary movements, and that individual movements and groups of movements are, *specially*, (observe, I do not say entirely) represented in particular portions or centres of this motor area. In this diagram, which is copied from Professor Ferrier's splendid work, *The Functions of the Brain*, you will see the exact position of these motor centres (see Fig. 1).

These centres functionate—*i.e.*, discharge or liberate motor nerve force—in obedience to the commands of the will. (The centre for the will has not as yet, and probably never will be exactly, localized. It is probably scattered over an extensive area of the cerebral cortex.)

From the motor cerebral cortex conducting fibres pass downwards, and convey the motor nerve force, which has been liberated by the generating centres, to the muscles on *the opposite side of the body.*

In their passage the conducting fibres form connexions with masses of gray matter in the cerebrum, pons, and medulla; the distribution and arrangement of which it is, for our present purpose, unnecessary to describe.

The conducting fibres first converge towards the internal capsule and lenticular nucleus of the corpus striatum (forming the corona radiata); pass through those structures; and form the descending fibres of the crus cerebri. This structure contains, therefore, all the motor fibres passing from the hemisphere on the same side, *i.e.*, all the motor fibres for the opposite side of the body. (Some authorities think that the movements of both sides of the body may be governed by either hemisphere. This is certainly true for the more automatic movements, and for the movements of the two sides which are in the habit of being performed in concert, such combined movements, for example, as those of the external rectus of one eye with the internal rectus of the other. The more highly specialized movements, *i.e.*, those of the upper extremity, are in all probability, governed by one, *i.e.*, the opposite, hemisphere.)

Below the crus cerebri the motor tract successively passes through the pons and medulla; and at the lower end of the medulla decussates in order to reach the opposite side of the spinal cord. (The whole of the pyramidal motor fibres do not decussate in the medulla. A small part passes down on the same side and forms the inner portion of the anterior column (see Fig. 2). The proportion of direct fibres passing down in the anterior column is usually, according to Flechsig, from 3 to 9 per cent. of the whole pyramidal tract.[1])

From the motor tract, as it passes through the pons and medulla, bundles of nerve fibres are successively given off, which cross the middle line, become connected with masses of gray matter (the trophic nerve nuclei), and then leave the nerve centres as the cranial motor nerves (see Fig. 3).

In the diagrams to which I now direct your attention the course of the motor tract and the position of the various nerve nuclei in the pons and medulla are shown (see Figs. 3 and 4). You will, by inspecting them, more readily understand that the position of the tumour must materially influence the character of the symptoms, *i.e.*, the extent and distribution of the spasms and paralysis. Where, for example, the tumour presses upon the crus cerebri (*cc* in Fig. 3) the paralysis will involve all the more highly specialized muscles (face, arm, and leg) of the opposite side. Where it presses upon a limited portion of the cerebral cortex—say the facial centre FC in figure 4—the resulting paralysis or spasm will be limited to the facial muscles. Where the lower part of the medulla (M in Fig. 3) is pressed upon, the facial muscles will escape, for the facial nerve has passed out at a point above the level of the lesion.[1]

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[1] Abstract by Dr W. J. Dodds of Flechsig's article in the *Journal of Anatomy and Physiology*, vol. xiv.

2. *The Manner in which Motor Nerve Tissue is injured, whether irritated, or destroyed, or both irritated and destroyed.*—It may be laid down as a general proposition that all nerve lesions produce one or other of two results, viz., either diminished or increased function (it would perhaps be better to say *perverted* function, for the increased function which results from pathological causes is never quite normal). We will, in the first place, consider the derangements which are manifested externally as increased (perverted) function.

Spasms (*Convulsions*).—The increased and perverted function which results from irritation (or loss of control) of motor nerve tissue by the pressure of a tumour is manifested externally as spasms and convulsions, and the lesion in such a case is said to be a "*discharging*" one. But in making use of this term I must beg of you to remember that it is not the tumour itself which discharges, but the motor nerve tissue which is irritated by it.[2]

The *character* of the convulsions, whether clonic or tonic, depends in part at least upon the nature of the nerve tissue which is irritated, whether gray matter or conducting fibres.

Clonic spasms (epileptiform convulsions) might theoretically be produced by irritation of any motor gray matter in the cerebrum, pons, or medulla. As a matter of fact, I believe they (clonic spasms) are generally due to discharge of motor centres in the *cerebral cortex.*

The extent and distribution of the spasms varies with the extent (and amount) of gray matter which is discharged. All degrees of clonic spasms (epileptiform convulsions), from the twitching of a single muscle or portion of a muscle to general (bilateral) epileptiform convulsions, are met with. Limited epileptiform convulsions are very characteristic of a "coarse" cortical lesion; and it is important to remember that, in such cases, the irritation has a great tendency to extend to and to involve adjacent and more distant centres, until, in some cases, the convulsions become general, and affect the muscles on both sides of the body.

The following case is a striking example of this fact:—

Case IV.—Mary C., æt. 37, a hawker, was admitted to this Infirmary, under my care, on 23d May 1875, suffering from right-sided convulsions and right-sided hemiplegia.

Some years previously she had received a violent blow from a poker on the left side of the head, which had fractured the skull. She was in consequence confined to bed for some time, but ultimately recovered, and, with the exception of "numbness" in the fingers and thumb of the right hand, and occasionally "twitchings" in the same parts, she had enjoyed good health until 10th May 1875, when the convulsions from which she was suffering at the date of her admission to hospital, commenced. The exciting cause of the attack seemed to have been a violent drinking-bout.

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[1] The *exact* effects which a tumour causes in each of these situations will be afterwards described.

[2] An intra-cranial tumour can theoretically induce discharge of a motor centre in other ways than by direct irritation (pressure), viz., by (1) causing arrest or interference with the blood supply of that centre by (*a*) direct pressure on its nutrient vessels, (*b*) irritation of the vaso-motor nerves distributed to its nutrient vessels; or (2) by reflex irritation of the convulsive centre in the medulla.

The *convulsions* were of three kinds—*slight, moderate,* and *severe.* In all the "march of the spasms" was the same.

In the *first* or *slight* form the muscles of the face and neck were alone affected.

In the *second* or *moderate* form the spasm commenced as before; first involved the muscles of the face and neck; then extended to the right hand, forearm, and arm; and finally to those of the right leg.

In the *third* or *severe* form the spasm commenced in the muscles of the face and neck (as in the first variety of fit); next involved the muscles of the right arm and leg (as in the second form), and finally extended to the muscles on the left side of the body.[1]

The patient died a week after admission.

On post-mortem examination I found that a lancet-shaped exostosis, about a quarter of an inch in length, which projected from the inner table of the skull, had caused a well-marked depression on the surface of the cerebrum. The exact position of the depression is shown in the diagram (see Fig. 5). It corresponds, you will perceive, to a point an inch and a half above the Fissure of Sylvius, and involves a part of the ascending parietal convolution.

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[1] The exact sequence of the spasms was so important that I quote from my previous paper in detail:—

The right corner of the mouth was drawn down in tonic spasm, the platysma being rigid. The eyes were then partly opened, and the head and eyeballs rotated slowly to the right. Clonic spasms next occurred in both eyelids, the right being convulsed much more powerfully than the left; in the muscles of the tongue, right side of the face and neck, the platysma being chiefly affected. After a short interval the spasms became less frequent, the head and eyeballs were slowly turned back to the middle line; the eyelids were widely dilated, and the patient presented an animated appearance. The eyeballs were finally rotated upwards and to the left; the eyelids closed, and the patient apparently fell asleep.

In the *second* or *moderate* form the convulsions commenced as before. After the head had been rotated to the right, and as the clonic spasms were commencing, the fingers of the right hand were drawn in to the palm; the hand was then flexed at the wrist, and the forearm, bent to a right angle, placed across the chest. The muscles of the right leg at the same time became rigid, and the foot strongly inverted. Clonic spasms then occurred in the muscles of the arm and forearm, the flexors being more powerfully affected than the extensors. A few spasmodic twitchings were seen in the extensors of the leg and thigh. There was never any flexion of the hip or knee.

In the *third* variety the convulsions became general. The fit commenced as before, and passed through the various stages enumerated above. After flexion of the right forearm, the arm was slowly raised at the shoulder until

DR BYROM BRAMWELL ON INTRA-CRANIAL TUMOURS.

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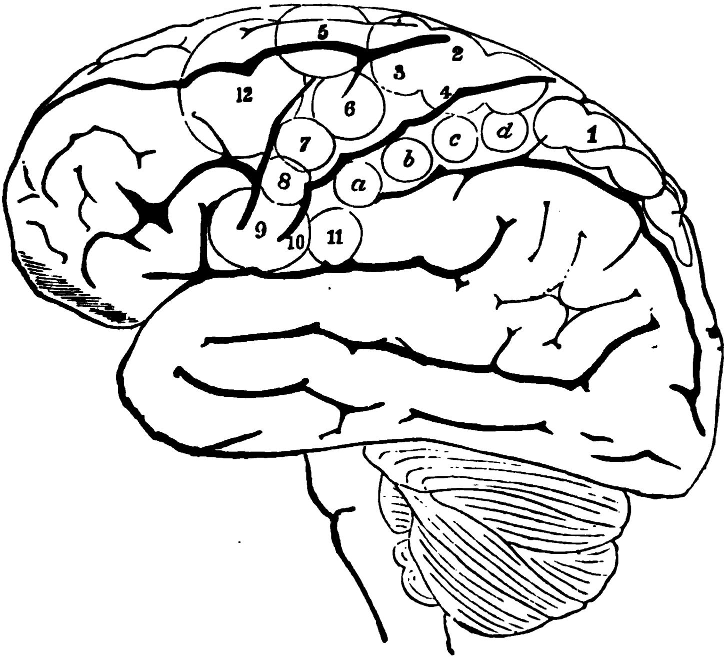

FIG. 1.—**Lateral view of the human brain, showing the position of the motor centres.** (After Ferrier.)

- (1.) Centre for opposite leg and foot.
- (2, 3, 4.) Centres for movements of arms and legs such as are concerned in climbing, swimming, etc.
- (5.) Centre for extension forwards of the arm and hand.
- (6.) Centre for the supination of the hand and flexion of the forearm.
- (7 and 8.) Centres for elevators and depressors of mouth respectively.
- (9 and 10.) Centre for the movements of the lips and tongue in articulation.
- (11.) Centre for the platysma; retraction of the angle of the mouth.
- (12.) Centre for lateral movements of the head and eyes, with elevation of the eyelids and dilatation of the pupil.
- (*a*, *b*, *c*, *d*.) Centre for the movements of the hand and wrist.

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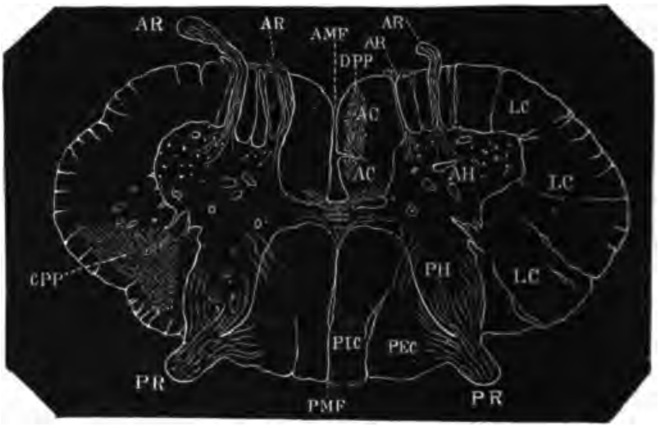

FIG. 2.—Transverse section of the spinal cord in the cervical region, showing the position of the degenerated fibres of the direct and crossed pyramidal tracts in a case of destruction of the right motor pyramidal tract above its decussation in the medulla. The greater part of the pyramidal fibres (crossed pyramidal tract), CPP, decussate in the medulla, and occupy the posterior part of the lateral column of the cord on the opposite side to the lesion. A small portion of the pyramidal fibres (direct pyramidal tract), DPP, do not decussate in the medulla, but pass down in the inner part of the anterior column of the cord on the same side as the brain lesion. CPP = Crossed pyramidal tract. DPP = Direct pyramidal tract. AC = Anterior column. LC = Lateral column. PEC = Postero-external column, or posterior root-zone of Charcot. PIC = Postero-internal column, or postero-median column, or column of Goll. AH = Anterior horn of gray matter. PH = Posterior horn of gray matter. AR = Anterior nerve roots emerging in separate bundles. PR = Posterior nerve roots entering in a single bundle. AMF = Anterior median fissure. PMF = Posterior median fissure.

Note.—The direct pyramidal tract (DPP) should come quite to the edge of the anterior median fissure, AMF.

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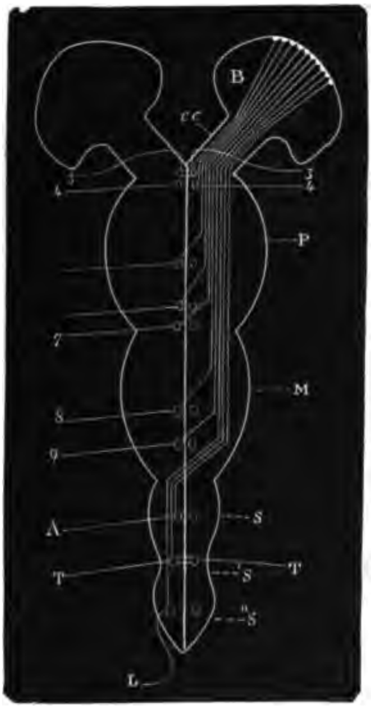

FIG 3.—Diagrammatic representation of the course of the chief motor fibres from the right hemisphere of the brain to the muscles on the left side of the body. The position of the nerve nuclei in the pons, medulla, and cord is shown. The trophic nerve nuclei of the third, fourth, and trunk muscles on the opposite sides of the body are connected, and can be thrown into action from either hemisphere. 3 = Third nerve (motor oculi). 4 = Fourth nerve (trochlear). 5 (number omitted by mistake in cut) = Motor division of the fifth nerve. 6 (number omitted by mistake in cut) = Sixth nerve (abducens). 7 = Portio dura or facial. 8 = Spinal accessory. 9 = Hypoglossal. B = Right hemisphere of brain. *cc* = Right crus cerebri. P = Pons. M = Medulla. S = Cervical portion of spinal cord. 'S = Dorsal portion of spinal cord. ''S = Lumbar portion of spinal cord. A = Arm muscles. T = Trunk muscles. LM = Leg muscles.

Note.—The fibres passing from the brain, B, to the third and fourth nerves should decussate and join the nuclei on the opposite side of the middle line.

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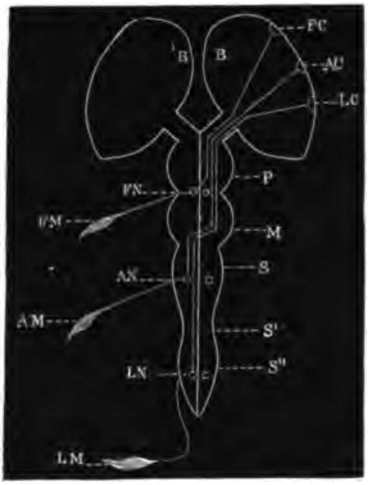

FIG. 4.—Diagrammatic representation of the course of the motor fibres to the right side of the face right arm, and right leg. B = Right hemisphere of brain. FC = Facial centre in cortex. FN = Facial nerve nucleus. FM = Facial muscles. AC = Arm centre in cortex. AN = Trophic nerve nucleus for motor nerves supplying arm. LC = Leg centre in cortex. LN = Trophic nerve nucleus for motor nerves supplying leg. LM = Leg muscles. P = Pons varolii. M = Medulla oblongata. S = Cervical portion of spinal cord. S' = Dorsal portion of spinal cord. S'' = Lumbar portion of spinal cord.

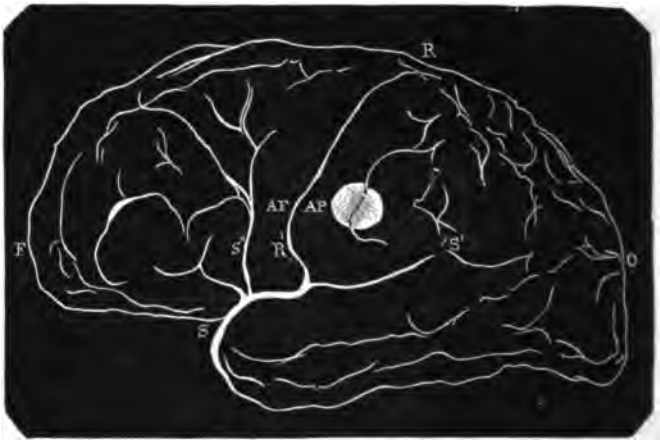

FIG. 5.—Outline of the left hemisphere of the brain in the case of M. C. The position of the lesion is shaded white. SS' = Fissure of Sylvius. SS'' = Fissure of Sylvius (ascending limb). RR' = Fissure of Rolando. AF = Ascending frontal convolution. AP = Ascending parietal convolution.

One striking feature of the limited or unilateral epileptiform convulsion which follows the irritation produced by a "coarse" cortical lesion, such as a tumour, and one which is an important distinction between spasms depending on this cause and the spasms which occur in so-called "idiopathic" or genuine epilepsy, is the fact that there is usually no loss of consciousness. When the spasms become bilateral, consciousness is generally lost, just as in an ordinary epileptic fit; but that this does not always occur, we have recently had an opportunity of proving.

Case V.—The patient, whom I now introduce to you, is a foreman bricklayer, æt. 35. He was first admitted to this Infirmary, under my care, on 4th November 1875, suffering from left hemiplegia. The paralysis was of five weeks' duration, and had followed a convulsion, in which the muscles of the left side of the body were alone affected, and in which consciousness was retained. There was a history of syphilis and of headache. Sight was normal, but, on ophthalmoscopic examination, both discs were seen to present the characteristic appearances of well-marked neuritis. These positive facts, together with the (youth) age of the patient, and the fact that there was neither cardiac nor renal disease, led me to conclude that the symptoms were due to a syphilitic tumour of the right cerebral hemisphere; while the fact that the paralysis had followed a unilateral convulsion, induced me to think that it (the paralysis) was functional epileptic in character. Under antisyphilitic treatment (full doses of iodide of potassium) rapid improvement took place; and on 31st July he discharged himself, saying that he was quite well. He continued to show himself occasionally, as an out-patient, until 22d April, when he returned to thank me, and to say that he was working regularly. I heard nothing more of him until the 23d of February last, when he was carried into the ward, at the time of my visit, in a fit; and I will now read you brief extracts from the notes which were taken at that time:—"His friends stated that he had continued perfectly well until 23d September 1876, when a scaffold, on which he and others were working, fell to the ground.

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it was nearly at a right angle with the body. The tonic spasm then passed to the muscles of the left arm and of the left leg in the following order: the fingers of the left hand were first drawn in to the palm; the arm was then raised upwards and brought over to the right side, so that the hand approached the forehead; the left leg was at the same time flexed upon the abdomen, the knee being slightly bent, the toes spread out, and the foot flexed at the ankle-joint. The tonic spasms soon passed off. Clonic spasms of the muscles generally occurred: the patient foamed at the mouth, and made a cackling noise.

In the bilateral convulsions the muscles on the right side were always more powerfully affected than those on the left.

It is important to observe that the general (bilateral) convulsions only occurred occasionally, six or eight in the twenty-four hours, whereas the *slight* spasms occurred every few minutes, and the *moderate* ones frequently.

The case is reported in full in the *British Medical Journal*, 1st September 1877, page 290.

His right collar-bone was broken, and he received a severe cut on the back of the right side of the head. He was laid up from the effects of the accident for a month, and during the whole of that time suffered from intense headache. He then returned to work, and, notwithstanding the fact that he did not feel well, he continued to follow his employment until 9th February, when he took a fit. The convulsion commenced about 8 P.M., and lasted for five minutes. He had hardly come out of the first when he took a second; a few minutes after, a third; and he has continued to 'work in the fits' ever since. They have never left him, for more than five minutes at a time, during the whole fifteen days. He has been quite sensible during the whole time, and has been able to take nourishment and medicine. The left side, which has been much more powerfully convulsed than the right, became paralyzed after the first few fits."

Those of you who were present at the time will remember that the spasms, which commenced locally, soon became very violent; that both sides of the body, but especially the left, were convulsed; that the patient foamed at the mouth, and made a cackling noise; that, in short, the attack exactly resembled the convulsions which occur in ordinary (idiopathic) epilepsy; with the important exception that the patient was quite conscious throughout the fit. You will remember that we were at first disposed to doubt that such was the fact, but that after a long examination, and after having carefully tested the patient in various ways, we thoroughly satisfied ourselves that it was the case.[1]

Another characteristic of the limited epileptiform convulsions which result from the presence of a "coarse" lesion, such as a tumour, in the motor area of the cerebral cortex, is that the spasms are very often followed by temporary (so-called epileptiform) paralysis.

The case to which I have just referred (Case V.) is a good example of this fact. On both occasions, on which this patient came under my care, the left side of the body was paralyzed, and I beg you to observe that the paralysis *followed* the fit; and *affected those muscles which were convulsed.*

The cause of the paralysis in such cases was supposed by the late Dr Todd—and in this he is supported by the high authority of Dr Robertson of Glasgow and Dr Hughlings Jackson—to be the exhaustion of gray matter (motor nerve cells of the cortex) which follows the excessive and violent discharge which is manifested externally as spasms.

Supposing this explanation to be true, it is a remarkable fact that paralysis does not occur after the convulsions of the *idiopathic* disease (genuine epilepsy), in which the discharge, as measured by the severity of the spasms, is very violent. The duration of the discharge is perhaps greater in most cases of coarse lesion, the fits, as a rule, recurring more frequently than in the idiopathic form of the disease. This explanation will not, however, do for all cases, for I have seen temporary paralysis follow a fit (a *single* fit in a case of coarse lesion), which was by no means of longer duration nor of a greater severity than an average convulsion of the *idiopathic* disease. We are driven, therefore, to conclude that there must be some difference in the process of discharge in the two cases. Possibly the explanation is to be found in the seat of the gray matter involved. I must, however, confess that I am disposed to think that the motor cells of the cerebral cortex are affected in both cases.

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[1] The patient died on 31st December 1879, and on post-mortem examination a syphilitic growth was found in the posterior third of the first and second frontal convolutions on the right side. The case is reported in full in this Journal, January 1879, page 599.

Such cases as the above (in which epileptiform paralysis followed a single "fit") are exceptional, and may possibly be explained by supposing that the lesion causing the discharge produced, at the same time, some local structural change in addition to irritation of nerve cells; and that the additional local change—say œdema, for example—was the cause of the paralysis. The question naturally arises, whether such a structural change is not the cause of all cases of temporary epileptiform paralysis.[1]

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[1] In the last number of "*Brain*," Dr Hughlings Jackson takes up the consideration of this question. He submits, page 445, that there is paralysis after epileptic (*i.e.*, after genuine epileptic) seizures, and that this paralysis is universally spread, and that it is owing to exhaustion of some nervous arrangements of the highest centres, and perhaps of lower ones too. He says, page 448, "I think, as a matter of observation, that, other things being equal, the more deliberately spasm sets in, and the more strongly it spreads, the more local it is, and also the longer it continues; and further, that the paralysis after such spasm is correspondingly more local, is greater in degree, and more persistent. If so, we may, on Todd and Robertson's hypothesis, say of the central process that the more deliberately the discharge begins, and the slower it is, the less widespread are the nerve currents developed, and the longer they continue; and that, consequently, the post-epileptiform exhaustion of centres is more local, more complete, and more persisting. On the other hand, the more suddenly spasm sets in, and the faster it begins to spread, the greater, I think, is the range it attains; and further, that the paralysis after it is more widespread, less in degree, and more transient. . . . As a matter of fact, I submit that the paralysis is really less in degree in the part first convulsed when the spreading of spasm is rapid and goes beyond the part, than when it is slow and is confined to that part. There is less spasm of the part first convulsed, that is, of the parts most specially represented by the cells discharging" (page 450). If the above reasoning be valid, we should expect, after sudden, rapid, short discharges, no decided local persisting paralysis, but slight, widespread, temporary paralysis, often so slight, so widespread, and so temporary, that it is ignored as paralysis and called prostration. If, to speak roughly, as much paralysis as makes one arm useless for four hours could be spread out thin all over the body for perhaps a quarter of an hour, it would not be recognised as paralysis at all, but as weakness, etc."—*Brain*, January 1881, p. 433. This explanation fails, I think, to account for the occurrence of paralysis in exceptional cases such as that to which I have referred. The duration of the discharge in that case was not longer than the

The practical outcome of all this is, that whenever you meet with a case of limited epileptiform convulsions which is unattended by loss of consciousness,—or whenever you meet with a case of epilepsy in which the spasms, which were at first limited and unattended with loss of consciousness, tend to spread to and affect other muscles, until finally the attack assumes the type of *true* epilepsy (bilateral epileptiform convulsions with loss of consciousness),—you should suspect the presence of an intra-cranial tumour, for you have to do with a discharging lesion of the motor cerebral cortex, and intra-cranial tumours are common causes of that condition.

Epileptiform convulsions of the ordinary type (ushered in with loss of consciousness and commencing as bilateral spasms) are also met with in some cases of intra-cranial tumour. They are of no importance in a localizing point of view, for they may result from the presence of a tumour in any part of the cranial cavity. General epileptiform convulsions of this kind are, however, by no means unimportant, for it not infrequently happens that a patient dies during such an attack. The following is a case in point:—

CASE VI.—An old woman, æt. 64, was admitted to this Infirmary, under my care, on the 28th September 1875, suffering from mitral stenosis and resulting dropsy. She was stupid, and unable to give any account of herself or her complaints. The people who brought her to the hospital stated that she had had "a stroke" three weeks previously, and had in consequence fallen down stairs and injured her left side. On examination I found that she was unable to stand, but that there was no definite paralysis. The chief nervous symptoms were headache, vomiting, deafness in the left ear, and occasional trembling fits, in which she complained of feeling

duration of the discharge in an average case of genuine epilepsy; and in genuine epilepsy the severity of the discharge of any given centre,—say the arm centre, for example,—as measured by the severity of the spasms, is, while it lasts, as great or even greater than the discharge in cases of local spasms. Granting, then, that the same nerve cells, *i.e.*, the motor nerve cells of the cortex, are discharged in the two cases (and we must, I think, grant that, wherever the discharge begins, it passes out through these motor nerve cells), it is difficult, I think, to explain the occurrence of paralysis in one case and its absence in the other, unless we suppose that there is some fundamental difference in the process of the discharge, or that some additional physical condition (such as œdema) capable of producing the paralysis is present in the one case and absent in the other. A more plausible explanation than that which the œdema theory affords is perhaps the following:—In the case of a coarse lesion the discharge is probably induced by direct irritation, leading to temporary increased production of nerve force, which, before it can escape, will have to overcome the (inhibitory) resistance, which, in such cases, is, we will presume, normal. In the case of genuine epilepsy, in which the discharge probably begins in the highest centre, the cause of the discharge is probably, as Dr Gowers suggests in his admirable *Gulstonian Lectures*, not excessive production of nerve force (in the motor cortical centre, *i.e.*, lower centres to those first discharged in genuine epilepsy), but diminished resistance; a greater amount of nerve force will therefore be required (to produce the same amount of spasm) in the case of a coarse lesion; hence the exhaustion of the nerve cells will be greater, and paralysis will result.

cold. The right optic disc was very much redder than the left, but there was no œdema. There was evidently some intra-cranial lesion, but an exact diagnosis was not ventured upon, as it did not seem justified by the facts. A month after admission she took an epileptic fit, and before the House-surgeon, who was immediately summoned, could reach the ward, she died. On post-mortem examination this beautiful little tumour, which I now show you, was found beneath the tentorium on the left side. It is, you will see, quite round, and about the size of a greengage plum. It springs from the dura mater, and has, you will perceive, made a deep indentation in the left lateral lobe of the cerebellum. In addition to this tumour, a small hæmorrhage, evidently of some weeks' duration, was found in the extra-ventricular portion of the left corpus striatum. The brain was otherwise normal.

The exact cause of death in this case was probably the sudden arrest of the functions of the "vital centres" (for the heart and respiration) in the medulla. In some other fatal cases of this description a profuse hæmorrhage takes place into or around the tumour.[1]

(To be continued.)

Part Second.

REVIEWS.

The Utricular Glands of the Uterus, and the Glandular Organ of New Formation which is developed during Pregnancy in the Uterus of the Mammalia, including the Human Species, etc., etc., etc. With a Quarto Atlas of fifteen Plates. Translated from the Italian under the direction of HENRY O. MAREY, A.M., M.D. Boston: Houghton, Osgood, & Company: 1880.

THE work before us contains the various papers hitherto published by Professor Ercolani on the anatomy of the placenta, and places before the English reader the peculiar but interesting opinions of that author in an exceedingly fascinating and agreeable form.

The fundamental ideas, which the author works out with much original research and argumentation, but also with no little repetition, may be formulated as two: 1st, That in all forms of placentation we have the co-aptation of two surfaces, the one of which, the maternal, is in its essence glandular, and secretes the nutritive fluid; and the other the fœtal, which is absorbent, and, being always bathed in the nutritive fluid secreted by the maternal surface, constantly absorbs it for the benefit of the fœtus. The simplest placenta is thus formed on the type of the simple juxtaposition of an absorbent villus with a secreting villus. The secreting surface, however, by its arrangements usually encloses the absorbent within its folds, so as to form follicles, which include and invest the absorbent villi. 2d, The secreting surface, like the absorbent surface, is not formed out of any pre-existent tissues, but is a structure of new formation, which in the different classes of animals bears a varying relation to the original mucous membrane. This new structure is formed of elements possessing only a temporary vitality, and ready to be expelled or absorbed at the termination of the period of utero-gestation. In the formation of this new structure, or, as Ercolani calls it, glandular organ, the utricular glands take no share. The author proceeds, by the process of comparative anatomy, to demonstrate the truth of his views, beginning with the simplest forms of diffused and multiple placentæ, and passing on to the more complex single placenta in the dog, the quadrumana, and in man. The patience, care, and transparent honesty with which the author conducts this part of his work is beyond praise. It would lead us too far to go into details; but we may state that, in regard to the human placenta, Professor Ercolani holds that the new formation, at first distributed over the entire mucous membrane of the body of the uterus, becomes rapidly arrested in growth over the rest of the mucous membrane other than that of the serotinal area. There it continues to grow, and forms the maternal part of the placenta. This maternal part of the placenta or glandular organ, or, as it is usually called, the decidua serotina, in the woman, is formed, according to Ercolani, from the rapid proliferation of the cells of the submucous connective tissue. These cells, which on the uterine surface of the placenta are well known to anatomists as the large cells of the placenta, according to our author are the subjects of rapid transformation. By their vascularization they form the bloodvessels of the glandular organ; by becoming condensed they form into fibrous bands to attach it to the chorion and for the support of the villi. They also provide the bloodvessels with connective tissue investments, and, in truth, appear to make themselves generally useful where needed for any particular purpose, such as fixation, separation, or secretion.

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[1] A tumour which is not situated in the motor area may theoretically produce convulsions of this description, either by causing reflex irritation of the convulsive centre in the medulla, or by producing profound alterations of the intra-cranial circulation.

The author traces in the human placenta development by successive stages that frequently correspond with the complete forms in other animals. The type of the absorbent villus is a loop of bloodvessels lying in a matrix of connective tissue, and covered with an epithelial lining of its own. In those placentæ in which the connexion between the absorbent surface and the secreting surface is not specially close, this epithelial layer remains on the

villus. But where intimate adhesion takes place between the secreting villus and the convoluted surface of the glandular organ, as in the human placenta, then the epithelium lining the outer surface of the villus disappears, and the chorionic villus receives an epithelial investment from the surface of the glandular organ, which so closely adheres to the chorionic villus that it has been regarded hitherto by anatomists, except Turner and Ercolani, as a chorionic structure, and is known as the epithelial mantle of the villi of the chorion.

In the course of the development of the glandular organ in the human female (and also in the quadrumana, apparently) there is produced an enormous ectasia of its bloodvessels, forming the enormous sinus system of the placenta, in which the venous and arterial blood of the mother commingle freely. As the glandular organ proceeds with its development its surface is thrown into folds so as to closely embrace and invest the fœtal villi, which are contemporaneously increasing in number and branching freely. The surface of the glandular organ thus constantly forms sheaths or investments for the chorionic villi, and is never penetrated by them.

The placenta in woman becomes, therefore, ultimately to be composed, on the fœtal side, of an enormous dendritic formation of villi, which project into the glandular organ and carry invaginations of it constantly before them, even when they reach its deeper or external layers, and, on the maternal side, of an enormous cellulo-vascular structure, in its deeper layers rich in large multinucleated cells, and towards its inner surface traversed by enormous sinuses formed by ectasia of its bloodvessels, and covered in from the fœtal side by a delicate wall of the mother's blood-vascular system, on the inner or fœtal aspect of which a single layer of epithelial secreting cells is placed. This compound wall follows in its direction the development of the individual fœtal villi, so that its foldings are innumerable, and the fœtal villi covered by its folds are found to project into and fill up the ectasic spaces formed in the placenta.

The two currents of blood, *i.e.*, the fœtal and maternal, are, however, always separated by the lining membrane of the mother's blood, by the epithelial layer of the glandular organ (epithelial mantle of the villus), and by the vascular loop of the absorbent villus.

The epithelial mantle of the villus, according to this view, is the secreting surface of the glandular organ, and separates nutritive elements from the mother's blood, which are taken up by the loop of capillary bloodvessels contained in the fœtal villus and thus conveyed to the fœtus.

The author further proceeds, by the method of comparative anatomy, to prove that in all mammals there is a unity of type in the formation of the placenta, and that the simple form of juxtaposition of a secreting villus or follicle lying in contact with an absorbent villus is maintained throughout the mammalia, making appropriate allowances for modification of details.

The first part of the work is illustrated by ten beautifully executed plates, and the theory of the unity of type in the placenta of mammals is illustrated by a series of four plates representing microscopic drawings, and a fifth composed of diagrams, in which are very plainly exhibited the author's idea of the actual formation of the various forms of placenta. The latter plate is extremely useful as a key to the peculiar views of the author in respect to placentation.

It will thus be noticed that the means by which nutrition is conveyed to the fœtus from the mother is, according to Ercolani, never by a process of simple endosmose and exosmose, but is always a process of secretion and absorption. Indeed, he holds that practically the fœtus is thus nourished during the whole of the pregnancy by a uterine milk secreted by the glandular organ of its mother's placenta, precisely as the fœtus after birth is nourished by the milk secreted by the glandular organ of its mother's breast. In this respect he is teaching in the lines which were adopted by the late Professor Goodsir, and which are in a great measure followed, so far as we understand, by his successor. For we have listened to Goodsir demonstrating from his well-known diagram of an ultimate villus that the interchange of materials must be by a process of growth carried on through the agency of secreting cells.

In his views regarding the constant invagination or introflexion of the surface of the decidua serotina Ercolani differs from most German anatomists, who constantly teach that the chorionic villi penetrate the surface of the decidua serotina and the lining membrane of the mother's blood-vascular system, and ultimately come to float freely in the current of the mother's blood.

Again, in regard to the origin of the epithelial mantle he is at variance with most authors except Turner, as it is almost invariably regarded as of fœtal origin. In denying any share to the utricular glands in the formation of the placenta, Ercolani is at variance with Sharpey and Weber, but at one with Turner and other recent observers, such as Leopold, Langhans, etc.

In looking upon the decidua serotina as an entirely new formation, and not a modification of the pre-existent mucous membrane, Professor Ercolani takes up a peculiar position. But we think he really makes far too much of this idea; for, after all, Ercolani's glandular organ is nothing more nor less than an enormous growth and transformation of the elements of that portion of the mucous membrane of the uterus known as the decidua serotina, and one cannot see the advantage of persisting in urging that it is an entirely new formation not formed out of pre-existent structures. Where could it be, even on the author's showing, were it not for the submucous connective tissue of this area of the mucous membrane of the uterus?

It is curious to watch the return of Ercolani, in a modified manner, to the ideas entertained by Dr John Hunter regarding the origin of the decidual membranes. John Hunter regarded them as an exudation upon the normal mucous membrane, and Ercolani takes the view that they are new formations upon the mucous membrane. This view does not meet the approval of any other anatomical authority at the present day, so far as we know.

The book is well translated, is beautifully illustrated, and well deserves the attentive perusal of all those who are interested in such subjects.

Surgery in the Pennsylvania Hospital.

THIS work is from the pens of Drs Morton and Hunt, surgeons to the Hospital, and is prepared by direction of the managers. It consists of a series of papers on surgical affections and operations, in which we have the opinions of the writers, drawn from their experience and from the recorded cases which have been treated during the past ten years. The book is well got up, and contains much valuable information in its 350 closely printed pages. The book is interesting as a record of cases and experience, and therefore is valuable mainly for reference. We naturally turn first to what is said on the treatment of wounds.

Antiseptic treatment, as we understand it here, is not practised, but all wounds are treated with rigid attention to cleanliness, dryness, and rest. Before an operation the parts are thoroughly cleaned, shaved, etc. After the operation close attention is paid to the arrest of hæmorrhage and drainage of the wound. Then a light dressing is applied, and the wound disturbed as little as possible afterwards. Carbolic acid is used freely, in water or oil, with the dressings.

The results in regard to amputations have been, during the last four or five years, 108 amputations with 17 deaths, none being from septicæmia. The principal causes of death were, shock 5, tetanus 4, secondary hæmorrhage 3.

The surgeons attribute their success to scrupulous cleanliness in the wards, dressings, etc.

Many cases of great interest are reported, and illustrated by excellent woodcuts and photographs.

Practical surgeons will find much to interest them in the articles and cases recorded under the following heads:—Amputation, Transfusion of Blood, A Painful Affection of the Foot, Elephantiasis, Neuralgia and Nerve Sections, Calculus of the Bladder, Badly united Fractures, Phosphorus Necrosis, Tetanus (which is unusually common), etc.

There is an interesting paper on the "History of the Discovery of Asymmetry in the Lengths of the Lower Limbs."

There are many excellent woodcuts illustrating the apparatuses and methods of treatment in use in the Pennsylvania Hospital. The last, and not the least (of 93), shows Dr Morton's dressing-carriage for use in the Hospital, which would be a valuable addition to any hospital, especially where dressers and nurses are few. Dr Morton's great speciality in this dressing-carriage is a large supply of water, by which means a continuous stream is available for the washing of wounds.

We have much pleasure in recommending this book to all practical surgeons, and we hope that many works of a similar kind will appear, to give us the united experiences of surgeons of large hospitals.

Conspectus of Organic Materia Medica and Medical Botany, comprising the Vegetable and Animal Drugs. By L. E. SAYRE, Ph.G. Detroit: George S. Davis: 1880.

THIS "Conspectus," the author tells us, is the result of time and study devoted to the interests of students of materia medica. It is meant to direct special attention to *drugs* proper, their characteristics, and botanical and geographical origin. The author has many good intentions, but how far he has succeeded is quite another thing. The book has much to commend it, but, unfortunately, the author is not always perfectly accurate in his statements.

It begins with a "Chart of Botanic Materia Medica." The Natural Orders are given alphabetically. The "Chart" is arranged in ten parallel columns:—1. Natural Order; 2. Officinal name of drug; 3. Botanical name of plant which yields it; 4. Common name of the plant; 5. Its habitat; 6. The part used; 7. Its constituents; 8. Its medicinal properties; 9. Its dose; and 10, Its officinal preparations. This chart has been very carefully prepared, and will be found of great use to the student.

The next part of the work is one of great interest, the "Geographical Grouping of Materia Medica." Had this chapter been carefully prepared, it would have formed a very interesting and useful part of the volume. It is very incomplete, and, what is worse, in several cases very inaccurate. For example, he speaks of calumba being obtained from the *west* coast of Africa.

There is an excellent chapter on "Structural Botany," but which is rather out of place in a work on materia medica. The chapter on the botanical arrangement of plants is very good so far as it goes; but it would have been a great improvement if he had added the officinal plants under each Natural Order.

The chapter on the "Characteristics, Constituents, and Adulterations of Organic Materia Medica" displays a considerable amount of research; but, unfortunately, the subdivisions are far from being logical, and in some cases roots and rhizomes are confounded, evidently due to defective botanical knowledge on the part of the author.

Notwithstanding these defects, the book contains much valuable information.

Healthy Homes. By Stanley Haynes, M.D., M.R.C.S., F.R.G.S. London: Baillière, Tyndall, & Cox. Pp. 48.

Dwelling Houses; their Sanitary Construction and Arrangements. By W. H. Corfield, M.A., M.D. Oxon., F.R.C.P. Lond., Professor of Hygiene and Public Health at University College, London. H. K. Lewis. Pp. 112.

Drainage for Health, or Easy Lessons in Sanitary Science. By Joseph Wilson, M.D., Medical Director U.S. Navy. Philadelphia: Presley Blakiston. Pp. 68; illustrated.

Report on the Sanitary Condition of Birkenhead for 1879. By Francis Vacher, Medical Officer of Health.

Just now there is a rage for giving bits of sanitary science, more or less correctly, to the public in popular form, and doubtless some good is effected by constant reiteration.

Dr Haynes' *Healthy Homes*, if commonplace, is readable, and deals with such subjects as ventilation, drainage, food, clothing, etc. We can readily believe that as a lecture it was useful, but it does not follow that the author acted wisely in listening to "the repeated requests to publish it."

Dr Corfield's little book contains the Cantor lectures delivered before the Society of Arts, and, as might be expected from such an authority, is well arranged, correct, and thoroughly practical. It must, however, be confessed, that there is nothing new either in matter or mode of treatment, and that the style is more suitable for the lecture-room than for print. The lectures were illustrated by apparatus from the Parkes Museum of Hygiene, and in considerable part are explanatory of these specimens.

Dr Wilson's *Easy Lessons* are easy in the sense of being easy and amusing reading. "It is supposed that any gentleman may conveniently read it in leisure moments." We advise him to skip the long dialogues and quotations from Victor Hugo, etc., and commend the remainder as interesting and instructive so far as it goes.

Dr Vacher's report is a sample of good routine work calling for no special remark. Respecting the Fever Hospital he writes, "Every year brings fresh proof of the estimation in which it is held by members of the medical profession, and of the good-will and confidence of those for whose benefit it was established."

Speech for the Deaf: Report of the Milan Congress on Education of the Deaf. 8vo, pp. 159. London: Allen & Co.

We hope that this volume will attract the attention of every member of the medical profession. The unanimity of the recent congress of experts on the question of teaching the deaf must convince all, whatever their previous bias, that systems of "signs" and "finger talking" must, for the future, be entirely set aside in favour of the "pure oral" or "German" system, which, dispensing absolutely with signs, teaches every pupil to read from the lips of his teacher, and speak as he speaks, not with hideous guttural noises, but in a voice indistinguishable from that of a hearing child. These views, now happily in the ascendant, have always had powerful advocates in the medical profession, and we congratulate our brethren who have long and earnestly pressed forward the subject that their perseverance has at length borne fruit. It will, however, still need the enlightened support of medical men to impress upon the parents of deaf children that they must not be brought up as a class apart; that dumbness is not a necessary consequence of deafness, but should in every case be prevented, unless blindness or imbecility co-exist with deafness. The volume before us contains, besides the report and resolutions of the Congress, papers sent by members of the Society for Training Teachers of the Deaf (Office, 298 Regent Street, London); one on the "Mental Development of the Deaf;" another, peculiarly interesting to those advocating the systems, entitled, "My Experience of the Various Methods of Educating the Deaf-Born," in which the author, Miss Hull, describes how she found it necessary to give up "signs," the "combined system," "visible speech," and now rests in the "pure oral" system. The paper by Dr Symes Thompson on the "Health of Deaf-Mutes," shows that the development of the lungs and of the whole body is greatly improved by the oral method; while the concluding paper by Dr Buxton, who has devoted his life to the subject, brings out some valuable facts, census returns, etc., as to the causes of deafness.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LX.—MEETING IV.

Wednesday, 2d February 1881.—Professor Simpson *in the Chair.*

I. In *Dr Watson's* absence, *Dr MacGillivray* exhibited two pathological specimens. The first was a compound cyst from a case of hydrocele of the spermatic cord. It was removed from a young man aged 23, who had suffered inconvenience from it for some years. He had consulted various surgeons, who had regarded it as a case of hernia, and had recommended the use of a truss. On examination, a sac could be felt protruding through the external ring into the scrotum. This contained merely a little fluid, which, on the patient lying down, disappeared within the abdominal ring. After hard work, or on the application of the truss, the tumour tended to inflame, becoming swollen to the size of an orange, and rendering the patient unfit for any exertion. On cutting down on the sac, it was found to be a multilocular cyst of the cord, passing through the external ring into the inguinal canal. This was carefully dissected from the other constituents of the cord and removed. The patient was now making an excellent recovery. The second case was one of epithelioma of the rectum. The patient, a young man between 20 and 30 years of age, had suffered for nearly two years from irritation of the lower bowel, leading to a constant desire to go to stool, with straining, and the passage of a mucopurulent discharge streaked with blood. On digital examination, a large ulcerated surface, with raised hardened edges, could be felt, commencing just within the verge of the anus, and extending upwards for two inches, nearly the whole mucous membrane being involved. Dr Watson recommended excision of the diseased portion of bowel, and this was done by means of an elliptical incision surrounding the anus. The lower portion of the rectum having been then dissected from its surroundings, it was drawn down and cut off by means of the thermo-cautery. Numerous vessels were ligatured, and a pad of cotton wool with a saturated solution of perchloride of iron in glycerine was introduced into the gap, so as to prevent any oozing. This was removed on the fourth day, and the patient was doing well. The preparation had been turned inside out and hardened in spirit. The ulcerated surfaces, with thickened edges, could be well seen, separated from one another by bands of healthy mucous membrane.

II. *Dr Byrom Bramwell* showed NAKED-EYE SECTIONS AND DRAWINGS OF THE MEDULLA OBLONGATA, PONS, AND CEREBELLUM from a case of cerebro-spinal sclerosis. The patient had been under his observation for the past eight years, and presented during life all the symptoms described by Professor Charcot as typical and characteristic of the disease. He died of pneumonia during the excessive cold of the last week of January. Through the kindness of Dr Crease of South Shields, Dr Byrom Bramwell was afforded an opportunity of making a post-mortem examination. The brain and spinal cord were in course of preparation for microscopical purposes, but the case was so rare and the appearances so typical that Dr Bramwell took the opportunity of showing the lesion in the pons and medulla in its comparatively fresh state.

Scattered through the transverse section of the pons there were numerous irregular, translucent grayish patches. Similar patches were situated in the medulla oblongata and in the white matter of the cerebellum. Dr Bramwell said he intended to report the case in full, and would take another opportunity of bringing it before the notice of the Society.

III. *Dr Symington* then read his paper on THE ANATOMICAL RELATIONS OF THE TRACHEA IN THE CHILD (illustrated by drawings and a frozen section of child in middle line), which will appear in a future number of this Journal.

Professor Simpson said they were doubly indebted to Mr Symington, first, for coming forward in the absence of others who were on the billet before him, and secondly, for the able paper he had read to them. It was often said that plain, bare human anatomy had been pretty well worked out; but here was a paper bearing marks of originality and freshness that might encourage the younger men to investigate similarly for themselves. There were one or two points he would like to remark on—first, the results of frozen sections. The Society with which he was more immediately connected—the Obstetrical—had taken precedence of the Medico-Chirurgical Society in the study of frozen sections, for he himself had been associated with Dr Hart in preparing and bringing before it frozen sections of the female pelvis. He could therefore confirm what Dr S. had said as to the striking beauty of a fresh frozen section, and the valuable information we get from it such as we don't get from dissections or from operations, because in operations we are too anxious to have the hæmorrhage arrested and get the operation finished to study the display of regional anatomy we have before us. He did not quite feel entitled to make special observation on the subject matter of the paper, but he might direct Mr Symington's attention to one anatomical work—Ribemont's plates,—where he thought he would find something regarding the relations of the trachea in the infant. With regard to hæmorrhage in tracheotomy, he had recently seen Professor Spence perform the operation with the thermo-cautery, and it struck him as a great improvement in the method of doing it, because there was no hæmorrhage at all. He had great pleasure in thanking Dr S. for his paper, and thought it one of great value to the surgeons.

Dr Ronaldson wished to refer specially to one point in Dr Symington's paper, viz., the position of the isthmus of the thyroid gland. He had been called upon lately to perform tracheotomy in the case of a child between eight and nine months old suffering from croup. The high operation was chosen, and Paquelin's cautery was used until the trachea was reached. A bistoury was then employed to divide the rings of the trachea. Speaking from memory, there would be almost half an inch of space between the lower border of the cricoid cartilage and the isthmus of the thyroid, so that when the isthmus was slightly hooked down there was plenty of space for the opening into the trachea. Paquelin's cautery answered admirably. Happily the child recovered.

Dr W. A. Finlay said he had listened with pleasure to Mr Symington's paper. The chief point of surgical interest was the position occupied by the innominate artery, which, in the subject exhibited, crosses the trachea so high up as only to have half an inch intervening between it and the isthmus of the thyroid body. If this artery occupied a corresponding position in a patient on whom tracheotomy was about to be performed, its pulsations would be felt by the surgeon in the examination of the region before commencing the operation, and then recourse would be had to the high operation. Dr Finlay had performed tracheotomy in children six times, and in each case had chosen the low operation, preferring this because the lower part of the trachea is more likely to be free from the obstructing membrane. In none of his cases had there been troublesome arterial hæmorrhage. In the subject shown by Mr Symington the isthmus of the thyroid covered the highest rings of the trachea, and in the high operation it would either have had to be forcibly pushed down or cut. He believed that the surgeon might cut the isthmus without causing such severe bleeding as might be expected from the vascular nature of the gland. Where proper assistance was not at hand, the high operation would be preferable.

Dr MacGillivray remarked that while he fully concurred with all that had been said regarding the excellence of Dr Symington's paper, still he did not think that the deductions brought forward against the low operation of tracheotomy had been fully made out. Dr Symington spoke of the innominate artery crossing the trachea nearly an inch above the supra-sternal notch, and that there was barely half an inch between the lower border of the thyroid gland and the vessel, these being reasons against the low operation on account of the danger of wounding the vessel. Now, it was well known that such an abnormally high position of the innominate, though not common, did occur, and he thought it a mistake to make general deductions from an exceptional case. If it were the ordinary situation, and if the danger of wounding the vessel were as great as Dr Symington seemed to think, it was strange that, considering the number of low tracheotomies performed, there was no authentic case of the innominate having been injured. Then, even when as abnormally high as in this case, it was somewhat misleading to speak of it as crossing the trachea one inch above the sternum, that giving the impression of its lying transversely across the neck. Now, if one looked at the preparation, one could see that this was not the case. It did cross the trachea, but only very obliquely from below upwards, so that it would require very great carelessness indeed before it could be wounded. While, therefore, fully aware of the importance of having a thorough knowledge of possible abnormalities, he thought it a pity for any one to raise up anatomical bugbears against an operation which practical experience had shown to be safe and simple in its performance and satisfactory in its results.

Dr Shand agreed in the remarks of those who considered Mr Symington's paper a valuable contribution. He thought it more applicable to the operation in childhood than after that; and, indeed, in any case the danger to the innominate artery in an abnormally high position could be guarded against by the careful application of the "tactus eruditus" to ascertain if any pulsation in the way indicated such an arrangement of vessels. One case that was brought to the Royal Infirmary when he was a house-surgeon there appeared to be illustrative of this, and he would briefly notice it. A nurse, in playing with the children, had a handful of sand thrown into her mouth, and, as she was laughing at the moment, the act of inspiration drew a large quantity into the windpipe and bronchii. In a partially asphyxiated state, with the throat convulsed with the efforts to cough up, she was prepared for tracheotomy below the isthmus of the gland (the favourite mode of operating then). The violent heaving of the windpipe rendered the operation difficult, particularly in gaslight. When the operator was about to make his incision from above downwards, that accomplished surgeon and anatomist, Dr Kelburne King of Hull, then a resident, with the point of his finger ascertained the presence of an artery (no doubt the innominate) in a position of danger. He at once directed the edge of the knife of the operator, another resident, to a safe position by turning the edge upwards and telling him to cut from below upwards. In this way the back of the knife faced the artery, and the operation was speedily and safely finished. In the few cases he himself had had to operate on he had adopted this mode of performing it more than once, and with such a precaution he still thought the operation below the isthmus of the gland the preferable. It afforded, too, more room to the operator, and is quite as easy to do. The case of the nurse ended in a most satisfactory recovery.

Mr Symington, in reply, thanked the Society for the kind way in which they had received his paper. With regard to Ribemont's plates, they were of new-born infants, not of children two years of age, as his subject was, and great changes occurred during these years, so that the plates referred to would not be of much use in regard to the relations of the trachea. As to the surgery he could not say much, not being a surgeon, and having performed the operation of tracheotomy only once; but he thought, from what he had shown as to the position of the innominate artery, practitioners who had not much experience would do well to perform the high operation when called upon. This way of studying tracheotomy by means of mesial sections had not been sufficiently insisted on.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XL.—MEETING III.

Wednesday, 8th December 1880.—Dr ANGUS MACDONALD, *President, in the Chair.*

I. *Professor Simpson* exhibited an ANENCEPHALIC FŒTUS sent by Dr Paterson of Hawick. The child was still-born. The quantity of liquor amnii was excessive, so that it was thought there might be twins. The case was of interest as one of recurring monstrosities. The first child was full time, well developed, except that there was a tumour, larger than the child's head, projecting through the posterior fontanelle. It lived six months. The second child was anencephalic, like the specimen exhibited. It was a male, and still-born. The quantity of liquor amnii was excessive. The third was a girl, well developed and healthy. She is living still, active, and intelligent. The fourth was, like the specimen, a boy, still-born. The fifth was a girl. She is living still, and is in every respect healthy and intelligent, like her sister. The sixth was the specimen now shown. Professor Simpson remarked on the excess of liquor amnii as illustrating that to which he had previously drawn attention, the occurrence of hydramnions with anencephaly.

II. *Professor Simpson* exhibited Professor Freund's INSTRUMENTS for PELVIMETRY, and demonstrated their use on the bony pelvis. One instrument was used for measuring the conjugate at the brim; a second and larger rod for external measurements; and a third for measuring the transverse diameter at the brim.

III. *Dr Macdonald* exhibited the UTERUS and OVARIES of a patient, aged 68, sent by Dr Osbert Wilson of Huntly. The following are the particulars of the case:—The patient had been a pauper for nearly forty years, and had proved herself a considerable pest to the local medical men for the whole of that time. She complained of all sorts of troubles in the course of her life; but they usually exhibited a marked hysterical character. Latterly she suffered from gastric symptoms, and there was very great dilatation of the stomach, with narrowing of the pyloric orifice, detected after death. The stricture was not malignant, however. The peculiar condition of her ovaries and uterus was not suspected during life. It will be observed that the uterus is small, and that its vaginal portion is the subject of senile degeneration. Two small polypi project from the outer os, whilst from the upper posterior corner of the body of the uterus a polypoid, subserous fibroid, about the size and shape of a large horse-bean, is seen to hang. The right ovary has nearly if not entirely disappeared, its place being taken by a rounded, or rather oval, mass of calcareous matter, the surface of which is rough and nodular, like that of a mulberry calculus. This calcareous mass measures 1¾ in. in length and 1½ in. in breadth, and weighs nearly 1½ oz. The left ovary is small and shrunken, but otherwise appears tolerably healthy, except near the middle part of the hilus, where there lies embedded a nodule of calcareous material about the size of a pea. The condition of the ovaries in this case appearing very singular, both on account of the interest which the woman's continued ill-health suggests in relation to the ovarian disease, as well as on account of the rarity of the lesion itself, he (Dr M.) has thought it worth while to show the preparation to the Society. Would this woman have been relieved had Battey's operation been performed upon her? Would she have been a useful member of society had she survived it? One cannot help raising this question in the face of such a preparation and after such a history.

IV. *Dr Macdonald* exhibited specimens of the URETHRAL ENDOSCOPE invented by Dr Skene of Brooklyn. There were two forms of this instrument; one, with blunted extremity and fenestrated side, for examining the urethra; the other, of a different shape, for examining the fundus of the bladder. This instrument he had lately used with great advantage. It can quite easily be employed without dilating the urethra, and the reflector of a laryngoscope with the sun's light suits excellently to afford the necessary illumination.

V. *Dr Macdonald* also showed some TUPELO-TENTS, which, on account of their greater rapidity of dilatation, as also because of their much greater dilating power, possessed very manifest advantages over both sponge-tents and tangle-tents. The tupelo-tent is prepared from an American marsh plant, the *Nyssa aquatica.* The process employed destroys entirely the vegetable juices contained in the plant, so that the tents are not liable to become putrid by fermentation of their gelatinous contents, as the tangle-tents are. Besides this, they are perfectly uniform in their dilating power, only require about three or four hours to completely dilate, and have about twice the dilating power of tangle-tents. He believed the tupelo-tent would very soon supplant both the sponge and the tangle-tent in practice.

VI. *Professor Simpson* then read his paper on METHOD OF CASE-TAKING IN MIDWIFERY, which appeared at page 680 of this Journal.

Dr Keiller highly commended this system of recording cases, and thought it would be of great service in public and private practice.

Dr Macdonald entirely agreed with what had fallen from Dr Keiller. He thought that the form contained everything that was required, omitting nothing really essential in the record of the cases. He thought all the Maternity physicians would be under a debt of gratitude to Professor Simpson for the trouble he had taken in drawing up these forms.

Dr James Young, in making some remarks on Dr Simpson's method of case-taking, asked if it was the rule in the Maternity Hospital to examine every patient before leaving the hospital, as he considered such treatment unnecessary. It was never done in private practice before taking leave of the patient, unless she complained of pain or was otherwise suffering.

Professor Simpson, in reply to Dr Young, said he considered it necessary in hospital practice to do this. In private practice it was not usual to do it, but this was at the patient's own risk.

Dr Peter Young thought very much depended on the way in which the thing was done.

Dr Simpson, in reply, thanked the members for their favourable criticism of the schedule, which he hoped might be useful in private as well as hospital practice.

Dr Keiller then brought forward his amended hospital report, which was agreed to by the Society.

Part Fourth.

PERISCOPE.

MONTHLY RETROSPECT OF OBSTETRICS AND GYNÆCOLOGY.

By Angus Macdonald, M.D.

The Diagnosis and Treatment of Obscure Pelvic Abscess in Women, with Remarks on the Differential Diagnosis between Pelvic Peritonitis and Pelvic Cellulitis, by Paul F. Mundé, M.D., New York (Reprint from the *Archives of Medicine*, Dec. 1880).—The author insists on the possibility, in many cases, of establishing a diagnosis between these two affections. He alludes to and homologates *seriatim* the points of difference laid down by the reporter in a paper which appeared in this Journal for June last. As regards prognosis, he says that an intra-peritoneal effusion is always a more serious matter, and is more liable to leave traces behind it in the shape of adhesions and obscure abscesses, than a cellulitis. The author then refers to the management of those cases where the ordinary treatment fails to dissipate the exudation mass, though faithfully and persistently employed for months. In the cases he reports (nine) the inflammatory attack dated from three months to two years back, and the mass had lost all its tenderness, was still hard, but at points slightly doughy. The symptoms were those of anæmia and debility, with local disturbances from pressure. In only one case was there a history of rigors. Aspiration was used in all, either with a hypodermic syringe or an ordinary aspirator, and fluid varying in character from serum to pus, and in quantity from one to four ounces, was removed, either by a single puncture or by several at the same sitting. Marked improvement, with almost complete disappearance of the swelling, occurred in every case, even in one where no fluid was found, and in none were there any disagreeable constitutional disturbances. He advises that aspiration be not performed sooner than two months after the inflammatory attack, and that should the abscess re-fill, it be opened by a platinum needle attached to the thermo-cautery.

HYSTERICAL MUSCULAR CONTRACTIONS, by W. T. Speaker, M.D. (*The Chicago Medical Journal and Examiner*, Nov. 1880).—The author draws attention to a class of cases where hysterical muscular contraction makes its appearance in the form of a tumour. The cases he mentions were in the flat muscles of the abdomen, and were painless. Under full doses of the bromides they rapidly disappeared. He also notes cases of spasmodic stricture of the urethra, of wry-neck, of contractions of the abdominal muscles simulating a threatened abortion, and of apparent knee joint disease, all caused by local hysterical contractions. The treatment consisted in the use of the bromides and of faradization.

THE DANGERS INCIDENT TO THE SIMPLEST UTERINE MANIPULATIONS AND OPERATIONS, by Geo. J. Englemann, M.D., St Louis, Mo. (Reprint).—The author has collected and gives in detail twenty-four cases illustrating the above, and lays stress on the presence of a latent cellulitis or a latent gonorrhœa as greatly increasing the danger attending uterine manipulations. His cases include the following:—Peritonitis following the use of the sound; peritonitis and death following the application of iodine to the exterior of the cervix; death from the intra-uterine injection of iodine; as also of another case where warm and dilute solution of the tincture of the perchloride of iron was used; two cases of inflammatory attacks following the use of simple vaginal injections; cases of peritonitis and of death after the introduction of sponge-tents; and one case, reported in the *Gaz. Méd. de Paris*, under the care of Nélaton, where death occurred in consequence of the employment of the simple vaginal douche. In regard to operations, he has cases of death following scarification of the cervix, incision of external os, of the lip of the os after plastic operations on cases of lacerated cervix, the use of the curette, the removal of small polypi, and after sewing up a tear in the perinæum. He then concludes as follows:—"1. Uterine manipulations necessitate the greatest possible caution, especially in first examinations; but even the oft-treated organ may, in an apparent freak, under unknown conditions, resent a most trifling interference. 2. No manipulation or operation is without danger; and before attempting either, certain physiological and pathological conditions must be guarded against—menstruation, pregnancy, and involution on the one hand, and the remnants of cellulitis and peritonitis on the other; above all, acute affections. These precautions may be often neglected, but now and then a punishment swiftly follows. 3. During operations we must, moreover, observe: *a.* The sanitary condition of the city. The existence of epidemics, especially of puerperal fever, erysipelas, or diphtheria, decidedly contra-indicates operation; and it seems that the spring of the year is most fraught with these dangers. *b.* Absolute cleanliness, if not Listerism in its details, as far as applicable. 4. After operations—I am still referring to the most simple—the patient must be, at least for a reasonable time, confined to her bed. Upon this the surgeon must insist, however ridiculous it may seem to the patient without ache, pain, or discomfort of any kind. Even after receiving uterine treatment, patients should observe a brief period of rest."

FOURTH SERIES OF TWENTY-FIVE CASES OF COMPLETED OVARIOTOMY, by G. Granville Bantock, M.D. (*British Medical Journal*, 22d January 1881).—In this paper the author records briefly his experience in the management of the pedicle by ligature instead of clamp or cautery, pointing out the success obtained by the ligature, and the groundless nature of the arguments urged against its use. He also enters at some length into the question of Listerism in its relation to ovariotomy, declaring that his experience had led him to depart from it in his practice. He believes that on several occasions the fatal issue was determined through the toxic and irritating effects of the carbolic acid used. Dr Bantock further affirms that in proportion as he reduced the strength of the carbolic acid employed by successive steps from 1–40 to 1–60–80–100–150, his results have rather improved than deteriorated. He contends that—1st, the antiseptic system, in his hands, has not yielded a lower temperature curve than the non-antiseptic in similar cases; 2d, that the reduction of the carbolic acid solution has been attended with a proportionate lessening of the temperature curve and a decrease in the rate of mortality. He holds that the application of carbolic acid in the manner prescribed by Lister is unnecessary, that the advantage resulting from the method is attributable, in great measure, at least, to the cleanliness attained by the spray and frequent ablutions. In the twenty-five cases which form the burden of this paper, and of which a short tabular abstract is given, there were twenty-three recoveries and two deaths, which is certainly a gratifying result, seeing that the cases were in no way selected; many of them having had extensive adhesions and other complications.

ON THE SLOWING OF THE PULSE DURING THE PUERPERAL PERIOD, AND ITS CAUSE, by R. Olshausen (*Centralblatt für Gynäkologie*, Feb. 5, 1881).—The author corroborates the fact, first pointed out by Blot in 1863, that in the majority of women, after delivery, a decided slowness of the pulse occurs. This slowing begins usually on the first day, often a few hours after delivery, and usually reaches 60 or 50 to 60 per minute. According to the author, slowing to from

40 to 50 is not rare; and he has noticed cases where it reached 34 and 36. He says that a pulse of 70 or 80 in the early days of the puerperium is enough, without the use of the thermometer, to indicate the beginning of some complication attended with fever. He then gives statistics in support of the above statements, and notes the fact that, in those cases where there has been fever with frequent pulse, after the subsidence of the fever the slowing of the heart becomes manifest, just as it does in the majority of cases on the first day after delivery. He endeavours to connect the phenomenon with the process of involution of the uterus, and accounts for the latter class of cases by the fact that involution is frequently retarded in them, and that after the subsidence of the fever it goes on rapidly. The cause he assumes to be the circulation of the destruction-products from the uterus, especially fat, in the blood. He is unable to advance much evidence in support of his theory. His own analysis of the blood and urine during the puerperium, and his experiments on animals, were chiefly negative. He quotes from Rassmann, who injected liver juice emulsion into the veins of two dogs. The more he injected the slower became the pulse, till a point was reached when it ceased entirely. The author then draws attention to the fact that in cases of fracture of bones, where fatty embolism is known to exist, slowness of the pulse is a phenomenon of not unfrequent occurrence.

THERAPEUTICS OF THE OVARY, by Dr Seeligmüller, Halle (*Centralblatt für Gynäkologie,* Feb. 5, 1881).—The author states that treatment for the ovarian pain which plays such a prominent *rôle* among the nervous phenomena of hysteria is so unsatisfactory that spaying has been proposed as a remedy. He gives two cases where the pain was so acute that morphia had to be used extensively, and where he used the subcutaneous injection of water with the effect of giving greater relief than the morphia had done, and without affecting the brain as it had. He recommends the injection of three-fourths of a gramme of boiled or distilled water, acidulated with a little acetic acid or some carbolic acid, either over the seat of the pain or at the corresponding point on the other side, and attributes the good results to something that looks very like what was formerly understood as "revulsion."

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By WILLIAM CRAIG, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

EUCALYPTUS OIL IN ANTISEPTIC DRESSINGS.—Dr Siegen writes very favourably (in *Deutsche Med. Wochenschr.*, 1880, No 30) of oil of eucalyptus as an antiseptic, its special advantage being that it shows no tendency to cause eczema or to irritate the skin in any way. The solution employed by Siegen was made by dissolving

3 grams of the oil in 15 grams of alcohol, and adding 150 grams of water; this quantity is enough to moisten thoroughly one metre of well-washed gauze. The dressing is applied wet, and, covered with gutta-percha tissue, it may remain without changing for three to five days. It is noted that in one case an eczematous eruption which had been caused by a thymol dressing healed under the eucalyptus dressing in a few days.—*Medical and Surgical Reporter*, January 13, 1881.

CHLORAL HYDRATE IN ATROPINE-POISONING.—Several cases of chloral-poisoning have been reported in which atropine proved decidedly useful, but the following case, which is reported by Mr Trocquart, is the first one recorded in which chloral proved effective in the treatment of atropine-poisoning. A very powerful man, twenty-four years of age, took, to relieve an attack of tinnitus aurium, an infusion prepared by himself from a handful of belladonna leaves. Half an hour after taking the medicine, symptoms of violent poisoning appeared, and emesis was produced by tartar-emetic. After three hours violent delirium set in, and persisted with short pauses of four or five minutes' duration. Four grammes of chloral hydrate were ordered, but the drug could not be administered internally, as the trismus was so severe that the patient's mouth could not be opened; five grammes of the drug were therefore administered by injection. The violent muscular spasms ceased soon afterwards, and the patient rapidly became quieter, so that in a short time it was possible to give the chloral by the mouth. The patient passed a quiet night, and on the following morning complained only of great muscular weakness. (*Allg. Med. Cent. Zeit.*, July 21, 1880; *The New York Med. Record*, Sept 18, 1880.)—*The Practitioner*, February 1881.

THERAPEUTIC USE OF PILOCARPIN IN SKIN DISEASES.—Professor Pick contributes a notice of the results which he has obtained from the use, during a period of two years and a half, of pilocarpin and its preparations in prurigo, psoriasis, eczema, pruritus, urticaria chronica, alopecia areata, trichopilosis, alopecia pityrodes, acne, hyperidiosis, pemphigus chronicus, and lichen exudativus, *i.e.*, in all skin affections where the secretion of sweat is more or less altered. Small doses of one-sixth of a grain in solution were ordered twice a day, one or two hours after food. Perspiration generally followed after four or five minutes. After several weeks' use the dose had to be increased, unless it had previously been intermitted. The skin became softer and more pliable, the scaliness diminished, and the hair was less brittle. The use of the remedy even for months in no way disturbed the general health. In thirty-two cases of prurigo the tormenting itchiness disappeared, and the relapses were somewhat delayed; while, again, in twenty-five cases of psoriasis no effect was seen. In two cases of pruritus senilis and one of urticaria a cure was effected. In eczema the result was not decided.

In ten cases of alopecia pityrodes good results followed; whilst in four cases of alopecia areata no decisive result was obtained. (*St Petersburg Medic. Wochensch.*, July 19, 1880; *The London Med. Rec.*, Oct. 15, 1880).—*The Practitioner*, February 1881.

Some Important Uses of Amyl Nitrite.—The editor of the *Alienist and Neurologist* gives the following uses for this agent:—*Differential Diagnosis of Cerebral Hyperæmia and Anæmia.*—Although it is not difficult to distinguish marked forms of these opposite cerebral states, yet there are instances where they sometimes present, even to the neurologist, so many negative evidences, that any additional sign that may aid in clearing away the doubt is an actual gain in our means of diagnosis. This sign we have found in the action of nitrite of amyl inhalations, in the minimum doses. In the markedly anæmic a single five-drop inhalation does not produce cephalalgia or any considerable amount of head uneasiness or suffusion of the face, while in the decidedly hyperæmic the sense of fulness of the head, and even of cephalic pain, is often exaggerated and very persistent even after one inhalation, the face also flushing more readily and extensively. *As a Therapeutic Agent in Anæmia and Imbecility.*—The known property of this agent in quickening the cerebral circulation induced us to employ it by inhalation in the treatment of cerebral and spinal anæmia and in the management of some imbecile patients. One little patient with very feeble head circulation, sluggish mental action, and weakened power of control over the lower limbs, is now evidently being benefited by it, conjoined with electricity and internal treatment. Two of our chronic aphasics are also on trial with it conjoined with other medication, with a view of diminishing the area of possible arterial obstruction within the brain.—*Medical Press and Circular*, January 19, 1881.

Effects of Hyoscyamine.—The Medical Report of the Eastern Michigan Asylum for 1880 gives an interesting account of the results obtained by the use of this preparation. It is shown to be a hypnotic of considerable power, usually causing a more or less prolonged sleep, although, in a small percentage of persons, it acts as an intoxicant, and increases pre-existing excitement. Its effects usually disappear in from six to twenty-four hours, but a certain degree of mental and physical prostration may remain for several days. Hyoscyamine in several respects differs from hyoscyamus. It acts more vigorously upon the muscular apparatus and cerebral centres, and rarely irritates the stomach or bowels; in some patients, indeed, it improves the appetite and assimilative functions. It also paralyzes motility to a much greater extent, producing frequently a staggering gait, and sometimes an inability to stand. The sphygmograph demonstrates at first increased blood-pressure, and, if the dose has been large, irregular ventricular contractions. In some patients a tolerance of the drug is soon established, and increasing doses are required to produce constant results. The first few doses also seem to modify morbid action to a much greater degree than subsequent ones. Further, unless beneficial results are obtained soon, it is useless to continue the drug in excited persons. Its beneficial influence upon the insane condition is most marked.—*The Detroit Lancet*, January 1881.

CUTANEOUS ERUPTION FROM QUININE AND CINCHONA.—Dr Van Harlingen describes these in the *Archives of Dermatology*:—Although quinine and the preparations of bark have been in constant and extensive use for the past sixty years, yet comparatively few cases of eruption due to the use of this drug have been reported until within the last few years. As if to make up for lost time, however, a very large number of observations have been published of late, most, if not all, of which are quite authentic, and which place quinine among the drugs which are liable to cause eruptions in certain individuals. The prevailing type of quinine eruption is erythematous, closely resembling the rash of scarlatina or of measles. It first shows itself over the face and neck, but soon becomes diffused over the whole surface of the body. In exceptional cases it may not become generalized; sometimes on desquamation the epidermis of the hands and feet is shed as a whole. Occasionally the quinine eruption may be papular in form, sometimes resembling erythema multiforme papulatum, or more frequently urticarious. In this class of cases, according to Morrow, there is more or less œdema, with distressing burning, tingling, and itching. Occasionally vesicular eruptions have been reported as resulting from the ingestion of quinine, although such eruptions are usually caused by the external irritative effects of the drug, as in many of the cases cited by Bergeron and Proust. Dr F. N. Otis related, at one of the meetings of the New York Dermatological Society in 1877, a case where two or three grains of quinine provoked an eruption resembling that from poisoning. Panas, quoted by Bergeron and Proust (*loc. cit.*), affirms that the administration of large doses (two or three grams) of quinine has provoked an eruption presenting the characters of the bullæ of pemphigus. Morrow has also collected five cases where hæmorrhagic eruptions were produced by quinine. In one of these, that reported by Gauchet, so small a dose as ten centigrams, continued four days, produced purpura with buccal hæmorrhage, principally from the gums. The patient in this case said she had taken the medicine before, and that it had always caused her to spit blood. Briquet gives the case of a patient who, after taking three grains of quinine daily for some little time, showed large ecchymoses on the buttocks and thighs, with a generalized, but not abundant, petechial eruption over the surface of the body. In a case reported by Schuppert, six-grain doses produced an intense localized dermatitis, with commencing gangrene of the scrotum. In one of Köbner's cases quinine always produced an erysipelatous eruption of the scrotum. In several other cases this special tendency to irritation of the skin of the genitalia is noted.—*Medical and Surgical Reporter*, January 22, 1881.

LACTIC ACID IN VESICAL CATARRH.—Dr Deecke, in *L'Union Méd. du Canada*, considers, after extensive experiment, that, of the acids, lactic acid gives the best results in this affection. He gives from fifteen to twenty grains *ter in die*. After forty grains have been taken its presence can be detected in the urine. He asserts that it checks ammoniacal decomposition in the urine, that it dissolves the excess of saline constituents, and destroys the microscopic fungi developed in such urine.—*Medical and Surgical Reporter*, Jan. 1, 1881.

Part Fifth.

MEDICAL NEWS.

OBITUARY.

ANDREW WOOD.

ON Tuesday, the 25th January, while apparently in the full enjoyment of both bodily and mental vigour, this eminent citizen of Edinburgh was suddenly snatched away. For some days previously he had not felt well, but nevertheless had been able to pursue his usual avocations.

As was almost his daily wont, he had called about one P.M. at Maclachan and Stewart's, the medical booksellers on the South Bridge, to have a look at the journals and "a crack" with the surviving partner, when he must have felt something wrong, as he abruptly returned to his carriage and ordered his coachman to drive home. On his arrival at Darnaway Street that faithful servant, who had been with Dr Wood upwards of nineteen years, was surprised to find no egress from the carriage, and, on looking inside, was horror-struck to see his master sunk down on the seat, apparently lifeless, with his hat lying at his feet. After being carried into the house he never recovered consciousness, and did not recognise his wife and family, though he repeatedly muttered the first part of the Lord's Prayer, "Our Father which art in heaven," showing, we cannot but believe, that, though insensible to external impressions, he was aware he was on a journey to a better world.

He only survived about half an hour after being brought home. Sir Robert Christison and Dr Rutherford Haldane were soon at his bedside, but at once discovered that his illness was mortal. The autopsy showed that probably for many years an insidious disease had been slowly but surely causing fatal ravages on his heart. Two of the aortic valves were rendered incompetent by atheroma, while the coronary arteries, and especially the left one, were almost completely occluded by the same deposit. This had so materially interfered with the nourishment of the muscular tissue of the heart that it was small and anæmic, with patches of fatty degeneration, while its fibres were most unusually friable. At a spot near the base of the left ventricle, close to the almost obliterated left coronary artery, a small valvular rupture had taken place, permitting a gradual escape of blood into the pericardium. The clot thus formed had at last vitally interfered with the necessary movements, terminating in fatal syncope.

In this strikingly sudden manner was removed from our midst one whose loss must be deeply felt, not only by his sorrowing relatives, but by a wide circle of patients and friends. He had the knack, so peculiarly useful to a medical man, of inspiring thorough confidence in his treatment; while his business habits, his ready command of language in debate, his clear-headedness and indomitable courage, rendered him a most valuable representative of the Royal College of Surgeons of Edinburgh in the Medical Council.

Dr Andrew Wood belonged to the fourth generation of eminent medical men of the Wood family who practised in Edinburgh. His great-grandfather, William Wood, became a Fellow of the Royal College of Surgeons in 1716; his grandfather, Andrew Wood, joined the College of Surgeons in 1769. The latter was a cousin-german of "lang Sandy Wood," whose appearance is so characteristically presented to us in Kay's Portraits. His father, William Wood, was born in 1782, in the Horse Wynd, at that time a favourite locality for medical men. It must still be in the recollection of many what a useful Fellow of the Royal College of Surgeons he was, how boldly he advocated medical reform, how ready he was in debate, and how well he conducted the business of the College.

Andrew Wood was born in the year 1810, when his father lived in South Hanover Street. He was educated at the Old High School, at first under Mr Lindsay, and afterwards the rector, Dr Carson. He held a high place in his class. After going through the humanity classes at the University, he commenced his medical studies, which he prosecuted with much steadiness and zeal.

While at the University he joined the Royal Medical Society, and we have often heard him say that the weekly meetings for discussing medical papers, in which he took a prominent part, had proved invaluable to him in after life. When we mention that John Hutton Balfour, John Rose Cormack, Douglas Maclagan, Risdon Bennett, the late Dr Vose of Liverpool, Charles Cowan of Reading, and others, were among his contemporaries and rival debaters, it can be easily imagined how lively, and at the same time how full of future promise, were these student debates.

The next stage of his career was his becoming a medical officer of the New Town Dispensary, then and still a great object of ambition to the junior practitioners of Edinburgh.

It is needless here to suggest how useful for his subsequent successful practice of his profession was the training he acquired amid the haunts of the poor. We would rather point to one result of his connexion with the Dispensary which had a cheering effect on his social relations, for it made him a *clubbable* man. It was at reunions of the medical officers that Dr Douglas Maclagan brought out his immortal songs, the *Nugæ Canoræ Medicæ*, and at a later period of his life Dr Wood discovered that he too could contribute to the enjoyment of the company by a topical song. When on this subject we may mention that Dr Wood, though he worked hard at his profession and scarcely ever gave himself a holiday, was very fond of these social gatherings, and it may be with justice said, that no man brought to them more robust spirits or more heartily endeavoured to promote the hilarity of the evenings than himself. He was a member of the Old High School Lindsay Class Club, the long-established and limited body of Æsculapians, and the Medico-Chirurgical Club. During the later years of his life his prolific pen yielded many an appropriate song on current medical topics, which he sang at these symposia with a gusto peculiarly his own.

In the year 1840 he married Miss Collyer, the daughter of a Norfolk gentleman who had settled in Lanarkshire. His family consisted of six sons and three daughters. His eldest son, shortly after taking his medical degree, was cut off by consumption, when he had given promise of being a valuable aid to his father and a much-beloved resident in Edinburgh. This sad event occurred not long after he had lost his eldest daughter, the wife of the Rev. T. T. Perowne, now Archdeacon of Norwich; and it had been preceded, only a month previously, by the sudden death of his youngest daughter. These three bereavements were noticed at the time to have produced a severe impression on his health and spirits, and possibly may have originated, or at all events fostered, the disease which ultimately proved fatal. It was about this time that he consulted a London physician, who told him that the seeds of disease were there, and that his end would probably be sudden. It illustrates the control he had over his feelings that he kept this information a profound secret from his wife and family, and only communicated it to a near connexion under the promise of secrecy, to be revealed after his death.

Dr Andrew Wood succeeded his father in several important public appointments. He was surgeon to Heriot's Hospital, an office occupied by his family since the year 1755. He was surgeon to the Merchant Maiden and Trades Maiden Hospitals, and held the office of Inspector of Anatomy for many years.

When the Medical Council was first instituted, he was elected by the Royal College of Surgeons as its representative, and up to the period of his death held that responsible office. How well he fulfilled his trust, and how jealously he guarded the interests of his College, must be known to all conversant with the medical history of our times; and yet, amid the many conflicting interests represented in London, he managed to secure the respect of all his confrères, while his active, methodical habits acquired for him one of the most important posts at the board, the Chairmanship of the Business Committee.[1]

Dr Wood was no advocate for the one-portal system, because he thought it could not work without destroying some of the Corporations that had ever been in the van in the advocacy and introduction of medical reform, and also because he was satisfied that the one-portal system, though in theory possibly the best, would virtually, when put in practice, resolve itself into what was now being gradually carried out. He advocated strongly, however, a searching system of examination, more especially in the practical work of our profession, before a license to practise should be accorded; and this he believed could be effectually attained by visitations from the Medical Council, without dislocating the whole extensive and costly machinery by which the present generation of students are trained and sent forth as qualified men upon the world. Whether rightly or wrongly, he was under the impression (an impression shared in by many North Britons) that jealousy of the success of the north-country medical schools had a good deal to do with the outcry about nineteen doors being opened wide to entice the embryo medical man to enter in and run the gauntlet for his license. He said, and said truly, that the seeming uniformity of examination aimed at by the one-portal system would be so only in name, for, where so many were every year entering the profession, a very large staff of examiners would be necessary, and, to insure uniformity, these men would all need to be of equal calibre, and all equally able to sift the knowledge of the student. That such an equality could not be obtained was his

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[1] At the Royal College of Surgeons' Dinner, 14th February 1879, the following song, illustrative of Dr Wood's frequent flying visits to London on the business of the Medical Council, was sung:—

THE FLYING SCOTCHMAN.

AIR—*Champagne Charlie.*

Oh! at the Surgeons' College,
  Among our brotherhood
There's not a man whose knowledge
  Comes up to Andrew Wood:
His active business habits
  Are known both far and near,
So at the Medical Council Board
  He represents us here!

Chorus.

The Flying Scotchman, Andrew Wood!
  Our faithful watchman, Dr Wood!
He runs up and down like Mercury to town,
  Does the Flying Scotchman, Andrew Wood!

I've seen him in his practice
  Fast driving through each street,
While James, his coachman, whacks his
  Black nags to make them fleet.
He'd just before his dinner
  A match at billiards gain:
At midnight he was miles away,
  Ensconced in London train!

Chorus.

Then, after bath and eating
  A breakfast worth the name,
He's off to Council meeting,
  To put our foes to shame.
He has at end of fingers
  Our rights, our wrongs, our laws,
And in his head a stern resolve
  To help the good old cause!

Chorus.

Next morning, if you're walking
  In this romantic town,
You may observe Wood talking
  To Smith, or Jones, or Brown,
As if he'd not so lately
  From London far come back,
But only in his usual rounds
  Stopt for a friendly crack.

Chorus.

He is so energetic,
  So gluttonous on his work,
These journeys peripatetic
  Don't make him classes shirk.
He'll forge on lines of railway
  Of lines so many score,
Translating quaint old Flaccus' lays
  Or Lessing's German lore!

Chorus.

Yes! *Wood's* a man of *iron!*
  A perfect paradox!
He'll write you lines like Byron,
  He'll argue like old Fox!
Eight hundred miles of railway
  He'll travel without sleep,
And at the end his mind's as clear
  As is the ocean deep!

Chorus.

belief, and he came to the conclusion that, under another name, much the same sort of examination as exists now would continue. When the University and Medical School of Edinburgh were attempted to be stormed by a small band of lady medical students, who insisted on their right to be taught along with their masculine brethren, Dr Andrew Wood stoutly withstood the innovation, and shared with others the odium unjustly incurred for daring to assert that the introduction of such an element would go far to ruin the prosperity of the school. The promoters of the movement could not or would not understand that it was not a jealousy of their fair rivals that prompted the opposition they encountered, but the feeling that it would not be beneficial to the morals of either sex for these young people to be associated together in medical classes.

As a manager of the Royal Infirmary Dr Wood brought his business habits and sound sense to the assistance of that noble charity, and he took an active part in making arrangements for the building and superintending the progress of the new Infirmary.

Dr Andrew Wood's active mind was never idle. When not engaged in the practical or business duties of his profession, he was ever employed in literary pursuits. He was a staunch Conservative, and for a series of years, under the *nom de plume* of Fabius Cunctator, supplied a number of poltiical articles to the *Daily Express* and the *Edinburgh Courant.* But it was not merely in politics he took an interest; on many social subjects he gave the public the benefit of his views under the *sobriquet* of Vindex or Timothy Dryasdust, while latterly many a stray corner of a newspaper found space for a racy copy of verses illustrating the current novelties of the year.

In the year 1870 he commenced a series of translations from Latin and German authors, the *Satires of Horace* being the subject of his first attempt, followed by the *Epistles* and *Art of Poetry.* He next translated Schiller's *Don Carlos,* Lessing's *Nathan the Wise,* and, last of all, Schiller's *Lay of the Bell, and other Ballads.* These works were favourably received at the time of their publication, more, perhaps, for the classical knowledge displayed, and strict adherence to the text in the translation, than for elegance in style. Before the publication of *Don Carlos,* Dr Wood suffered from a troublesome and painful affection, considered to be gout in the soles of his feet, and he was advised to give up entirely for a time the arduous duties of his profession, and go for relaxation and the use of the baths to Aix la Chapelle. He accordingly stayed there for a month, his idea of relaxation consisting in reading several hours a day with a German governess in order to improve his knowledge of the language. He, notwithstanding, came back cured. We have before us now two stout folios, containing cuttings from the newspapers which gave his views to the public on so many subjects, and also the innumerable songs which helped to brighten the social gatherings in which he shone, and we could easily select from these illustrations of his powerful argumentative style as regards prose, and his happiest vein of humour as regards verse; but we prefer giving a specimen of what few but his nearest and dearest of kin knew lay at the bottom of a calm and undemonstrative heart—strong natural affection, blended with an unostentatious piety that left him ever prepared to obey the summons of his Maker:—

IN MEMORIAM.

W. T. WOOD, died 28th September 1874.

"Peace, perfect peace, and light."[1]

Dear Will! thy days were few on earth,
  'Gainst sickness hard thy fight;
But God in mercy sent at last
  Peace, perfect peace, and light.

How gentle, calm, unmurmuring,
  'Midst pain and weariness!
Who would not fly to give thee ease
  And lighten thy distress?

So quiet, thoughtful, and reserved,
  So brave, so tender too,
So loving and so fondly loved,
  So guileless and so true.

Oh, many a weary day thou pass'd,
  And many a weary night:
At times 'twas dark; at last thou found'st
  Peace, perfect peace, and light.

I thought my heart would break when I
  Looked on thy pale, wan face,
And when I watched from day to day
  Thy young life ebb apace.

But now 'tis o'er, the struggle's o'er;
  From sin and pain released,
Thou'rt in that bright and glorious land
  Where anxious cares have ceased.

Lo! at the gate an angel band,
  Three sisters, thee surround,
To lead thee to that Saviour dear
  Whom they had sought and found.

Joy, joy for them! Joy, joy for thee!
  Put on thy robe of white;
Thou'st found on earth, in heaven thou'lt keep,
  Peace, perfect peace, and light.

---

[1] He calmly gave up life's latest breath with these words on his lips.—A.W.

Opposite this touching tribute to his son, in the volume of manuscript, is found the following, with no date, but evidently after his own dangerous state had been communicated to himself:—

The Time is Drawing Near.

No longer through my veins the tide
Of youthful blood runs clear ;
In dull and sluggish stream it flows :
The time is drawing near.

I once could breast the mountain steep
With vigour, without fear ;
Now I must trembling totter down :
The time is drawing near.

The thin, gray hairs, the waning strength,
Remind me year by year
That this my home on earth to leave
The time is drawing near.

Fortune and health, e'en friends may fail,
And little left to cheer ;
But why repine ? for bliss beyond
The time is drawing near.

DEATH OF PROFESSOR SANDERS.

This great physician and most lovable man died on Friday, the 18th February, after an illness which had completely laid him aside from practice for nearly six months. In him the profession and the public have lost a great teacher of pathology and clinical medicine, a trusted physician, and an upright, honest gentleman in the highest sense. We hope to publish in our next number a notice of his life and works by one of his intimate friends.

DR P. D. HANDYSIDE, F.R.C.S.E.

Again we have to record the loss of another well-known figure from our streets. Dr Handyside, eminent as a brilliant operator, an accomplished surgeon, and a painstaking teacher of anatomy, died on Monday, the 21st February 1881, after a very full and busy life, spent in harness almost to the end. We hope to lay before our readers a fuller notice of his life also next month.

GEORGE H. AITCHISON, M.D.

With great regret we are called upon to record the death of Dr Aitchison, which occurred at his house in George Square, Edinburgh, on the third of February. For about two years Dr Aitchison had been an invalid, and for more than a year past his prostration had been so great as to make him quite unfit for practice. His death at the early age of 36 has deprived the medical profession in Edinburgh of a most accomplished physician, and has ended a career which was characterized by much that had been already achieved and by the certainty of great future distinction. Dr Aitchison was a native of Kilmarnock, and he studied in the Arts and Medical Faculties of Edinburgh University. He was distinguished, as a student, for great vigour of intellect and for his extensive knowledge of philosophy and English literature; and the information which he brought with him, when supplemented and systematized during a prolonged university career, raised him to a position of marked distinction amongst his fellows. This early devotion to general culture imparted to Dr Aitchison's character a breadth which, in our times of paralyzing specialization, is rarely met with, and which was more characteristic of the early physicians, who, if they were less precisely scientific than those of the present day, were more distinguished for that range of accomplishments which entitles a man to be called learned, and which expanded their sympathies beyond the narrow borders of their profession. At all times, and not least during the period of his prolonged illness, Dr Aitchison showed a watchful interest in the Royal Infirmary and the Edinburgh School of Medicine, regarding which circumstances had enabled him to acquire a special knowledge. Had life and health been granted to him, he would in all probability have become a most useful public man, he being possessed of that soundness of judgment and pleasing fluency which, when accompanied by the mental fulness resulting from early and extensive reading and observation, settle the convictions of others who are less gifted. Dr Aitchison was assiduously attended during his illness by Dr James, and was frequently seen by Mr Spence, Drs Sanders, Watson, Affleck, and Joseph Bell, but his malady was of a form which medical science could do little to counteract.

CORRESPONDENCE.

(To the Editor of the Edinburgh Medical Journal.)

London, 21*st February* 1881.

SIR,—It is only in very exceptional cases that one can be justified in taking the unusual course of addressing the editor regarding a review which has appeared in his journal. Whether or not I am justified in doing so in the present instance I must leave to you and your readers to decide. In your issue of February I observed a review of Martin's *Atlas of Obstetrics and Gynæcology*. This being a work well known to me in German, and having also frequently perused the translation, I was interested to read the criticism on it in your Journal. Finding that at the outset the tone of the article was not such as is usually seen in a first-class journal, I was led to examine it a little more clearly and critically. The result is that I feel it my duty to call your attention to it, and to ask you to give publication to my remarks upon it.

To begin with the first quotation from the preface, I find the reviewer has made two errors in syntax. They occur in the words, "an der artz." "An" is a preposition which governs the accusative, consequently the article should have been "den;" again, all nouns in German begin with a capital letter, so "artz" should have been written "Artz." On referring to the original German I find it correctly written. Regarding the translation of the same clause, the reviewer, in addition to misquoting it, has misinterpreted its meaning, which is,—In general practice, whenever a physician has obtained a reputation for obstetrics, his advice is also sought for in the so-called diseases of women. This passage is an explanation of a preceding one, and cannot be literally translated into English. The translator has certainly come nearer the meaning than the reviewer, who has simply translated the German words. "Fachwissenschaft," the reviewer says, is "the scientific knowledge of our profession"! whereas it means a branch or specialty to which any one may have devoted himself, such as obstetrics, anatomy, diseases of the eye, etc., and may be fairly translated "our profession." The reviewer objects to "vielen" being translated "some," and says it should be translated "many." Here he is wrong, as the word is used in the sense, "in some . . . . in others . . . ." In another figure, where glands are described, the reviewer states that the translation of the German words "einwärts gezogen" by "turned inwards" is nonsense. "It should be 'drawn inwards,' which makes sense." Here the author is describing that the openings of the uterine glands are funnel-shaped, that a depression exists on the free surface of the mucous membrane at the points where they open; "drawn inwards," therefore, cannot be said to convey the meaning intended by the author. In Plate XL., Fig. 3, in "umgebogene" the reviewer has missed the meaning of what the word refers to. Perhaps he will be surprised to learn that it refers to the posterior wall being laid open, as the translator has it. A longitudinal incision has been made in the centre of the posterior wall of the uterus; the wall on each side has been bent or turned outwards, so as to expose the interior of the cavity, and to this unbending or bending outwards "umgebogene" refers. "Ziemlich," the reviewer says, should be translated "somewhat," which is certainly the dictionary meaning of the word; but when the author says "ziemlich Kernreich," he means that the part is *rich* in nuclei. The expression is a purely idiomatic one, which one who has had to depend upon the use of a dictionary alone might not be acquainted with, and which, as the reviewer says it is not his object to offer a corrected edition of the book, one can excuse his apparently not knowing, though we should have thought, before he sought to take the mote out of his brother's eye, he would have made certain that the beam was out of his own.

The reviewer points out some printer's errors, but does so in a manner which has hitherto been unheard of in reviewing, and which it is to be hoped will not find imitators. He says, "In regard to Latin quotations, we notice gross irregularities in the use of points which lead to violation of all the principles of grammar, and make the references nonsensical. . . . . It would surely have been better to have omitted the Latin references altogether than thus to show to the world that the editor had no idea what they signified. 'In.,' when used as a contraction for 'inauguralis,' is uniformly treated by the editor as the preposition 'in,' which of course does not improve either sense or syntax." He refers to the numbers of the plates where the point has been omitted and the word appears as "in" instead of "in.". On turning to those plates, I find in the first two mentioned the point has been omitted, in the third the word *does not occur*, and in the remaining two referred to by "etc., etc.," Plates LXIX. and LXXII., the only other occasions on which the word is used in the book, I find it *correctly* printed "in."; how far, therefore, the reviewer is justified in saying that the editor has shown to the world that he has no idea what it signified is difficult to understand.

I think I have now pointed out enough to show the character of the review of the translation of this important work, though I have by no means exhausted it, and will conclude by tabulating in a few words its nature generally.

1*st*, While the reviewer has pointed out some mistakes, many of his so-called correct translations are entirely wrong, while the translator is right. In other cases both have misinterpreted the author's meaning.

2*d*, Many of the so-called corrections are mere quibbles, arising from the translator having used free translations of some passages, a thing he has a perfect right to do, or from printer's errors and slips of the pen which have been overlooked in correcting the proof, and which should have been pointed out as such.

3*d*, There is evidence that the review has been done in a careless manner by one who is certainly not a master of the German language.

4*th*, Several expressions are of an unjustifiable—we might almost add libellous—nature, and totally at variance with the tone which should pervade an impartial and unbiassed review.

"Wann? wie? wo nur bricht's hervor
Solcher Tucke
Tiefauflauerndes Ungethüm."

I am, yours obediently,
J. G. GARSON, M.D. Edin.

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THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On Paralysis of Hands and Feet from Disease of Nerves.* By THOMAS GRAINGER STEWART, M.D., Professor of the Practice of Physic in the University of Edinburgh.

(*Read before the Medico-Chirurgical Society of Edinburgh, 2d March* 1881.)

THE interest of physicians in the study of diseases of the nerves, as distinguished from those of the nerve centres, has recently been on the increase; and certain cases which have during the past year come under my observation are so well fitted to throw light upon one department of the subject, that I think it desirable to bring them under the notice of the Society.

CASE I.—J. I., a clerk, æt. 52, was admitted to Royal Infirmary 18th Feb. 1880, complaining of weakness, stiffness, and pains in hands and feet, which had lasted for six weeks. His father had died from hemiplegia at the age of 85. He had himself been temperate, and lived under healthy conditions. He had had no important disease prior to the commencement of the illness for which he sought advice. He stated that in the beginning of December 1879 he fell down a stair and was considerably bruised and shaken. On the following day had some rheumatic pains, which came and went during the succeeding week. About ten days or a fortnight later he began to experience a feeling of tingling and numbness in his hands and feet, with stiffness in the joints of the hands and a difficulty in grasping and in walking, swelling of the feet and hands, and severe cutting pains both in the hands and the feet. All these symptoms gradually increased in severity until admission.

On admission he was pale, but not cachectic-looking. Temp. in right axilla 99°·8, in left 99°·2. There was no important abnormality excepting in the nervous system.

Sensory Functions.—He complained of severe cutting pain of an intermittent character in hands and feet, increased on pressure, especially of palmar or plantar surfaces, and aggravated by movements of the body, such as lying over on his side or bending his back. With the pain there was a feeling of numbness, but the tingling sensation of which he had previously complained had disappeared. There was no girdle-pain, formication, or giddiness. Sensibility to touch was greatly diminished in both hands, slightly so in the forearms, normal above the elbows. It was also greatly diminished and delayed in both feet, and to a less extent in the legs. Sensibility to heat and tickling were correspondingly affected. The perception of painful impressions was delayed, but felt acutely, a distinct interval elapsing between pinching the hand and its perception; but a slight pinch was felt to be very painful, and the pain persisted longer than normal, and set up considerable reflex movements. The muscular sense in hands and feet, as tested by pointing and by the application of weights, was diminished, but the sense of pressure still more so. Sight, hearing, taste, and smell were all normal.

Motor Functions.—The organic reflex functions were normal; the skin reflex was absent when slight stimulus was applied to soles, but exaggerated and tending to become general and painful when the stimulus was strong. Patellar tendon reflex was lost. Voluntary motion was greatly impaired in hands and feet, all the groups of muscles being weakened, but those of the fingers and toes completely paralyzed. The muscles responded to some extent to the interrupted current, and in proportion to the degree of paralysis the result was feebler.

Vasomotor and Nutritive Functions.—There was glossiness of the skin over the backs of the fingers, and some appearance as of bruises over the toes, but there was no œdema. The muscles were diminished in volume. The acute pain which attended passive movements of the hands and wrists, as well as of the feet and ankles, was not associated with crackling or other evidence of changes of joints. There were no fibrillary twitchings of the muscles.

Cerebral and Mental Functions were normal.

The *Cranium and Spine* were also normal.

The treatment at first was by means of the liq. extract of ergot (♏ xx. every four hours), and afterwards by the application of the interrupted current to the paralyzed part. A degree of improvement soon manifested itself, and on May 26th, three months after admission, the condition was as follows:—Pain had disappeared; numbness continued, but to a less extent. It was more marked in the right than the left hand. Sensibility to all kinds of impressions correspondingly improved. Motor power, although still diminished, greatly better. The muscles of the affected districts much wasted; and though the pain had disappeared from the joints, there was a good deal of stiffness.

On *July* 15*th* the sensibility was almost normal. The patient could distinguish the weight and pressure of a half-sovereign from that of a sixpence put into his hand. Skin and patellar tendon reflex were normal. Voluntary motion is slowly returning, the patient being able now to write his name with a little effort, and to stand, although not yet to walk.

On 23d September the sensory functions were normal, the skin and patellar tendon reflex rather exaggerated. Voluntary movements of hands were almost completely normal, except in respect of flexion of the distal phalanges. Patient could walk about quite well, but moved the feet *en masse*, the toes playing imperfectly, although he could move them when sitting. The skin was better nourished, the nails much curved. The muscles of the arms and legs, which had been greatly wasted, were gradually recovering their normal volume.

CASE II.—J. H., æt. 51, a weaver, employed in the Blind Asylum, was admitted to the Royal Infirmary 11th June 1880, complaining of weakness and numbness in hands and feet, with pain in back. He had been ill for twelve days. Family and personal history were unimportant. The patient stated that on the 6th of June he had, after sleeping for a couple of hours on a sofa, felt on rising that he was chilly, and had a numbness and weakness in both legs and feet, as if they were "sleeping." The following day the symptoms continued, but he managed to work, although feeling the extremities cold and with "pins and needles." During the following day a further increase of discomfort took place, so that on the next he was unable to go to work. On the 11th he was able to walk from the Blind Asylum to the Infirmary, a distance of about a quarter of a mile, but with considerable difficulty and great uneasiness, and the effort was followed by a feeling of intense fatigue. Some days after the feet had become affected the hands became involved in a precisely similar manner.

On admission there was nothing wrong except in connexion with the nervous system.

Sensory Functions.—Pain was felt in the small of the back on the slightest movement, but the pain was not severe. He complained of feelings of coldness, formication, and numbness in the feet and tips of the fingers. Sensibility to touch was distinctly impaired in the parts in which the abnormal sensations were localized. The right hand and foot were worse than the left. Sensibility to heat and cold distinctly diminished; to pain, natural. The muscular sense and the special senses were normal.

Motor Functions.—The organic reflexes were natural. The skin reflex absent in right foot, diminished in left. Patellar tendon reflex absent in both legs. Passive motion of all the limbs normal. Voluntary motion was lost in the toes, very imperfect at the ankles, normal at the knees and hips. The hands, particularly the right, were much weakened. The movements of the wrists, fingers, and thumbs, although feeble, were not lost. The patient could neither walk nor stand unsupported. Co-ordination seemed impaired. He could not write, and had the greatest difficulty in buttoning an easy button.

Vasomotor and Nutritive Functions.—The feet, and to some extent the hands, were œdematous. The muscles of the affected parts were flabby and undergoing atrophy.

The Cerebral and Mental Functions were natural, and the spine exhibited no curvature nor pain on percussion. He was ordered one drachm of liquid extract of ergot three times a day. During the following fortnight there was a good deal of constipation, and somewhat later a girdle pain was complained of round the abdomen. In the latter part of July it was occasionally necessary to draw off the urine by catheter.

On the 12th of August there was some pain round the abdomen and a feeling as of a tight bandage over both feet. The sensibility to touch diminished in the feet. Moderate heat was perceived correctly but slowly; great heat was perceived instantaneously. Pain of other kinds was felt naturally; special senses natural. Organic reflex functions interfered with in respect of micturition and defecation, the former apparently by spasm, but less troublesome than before. Skin reflex of soles diminished. Patellar tendon reflex lost in both legs. Voluntary motion slightly improved in the legs; in the hands now practically restored.

During September improvement went on. Towards the end of it he was able to walk a few steps with the aid of another patient. In the end of October he was able to walk a distance of an eighth of a mile. Since that time he has been steadily improving. During the later stages of the case strychnia was substituted for the ergot which had been used at first.

CASE III.—G. F., æt 31, hotel-keeper, admitted to Royal Infirmary 8th November 1880, complaining of general weakness, pain, stiffness, and loss of power in hands and legs, and confused vision. He was a German by birth, had been employed in various hotels, and had recently become proprietor of a hotel and got married. Early in August he noticed a weakness in the legs, and a dancing of objects before his eyes. In September pain came on in the legs. It was of a prickling character, and gradually increased. Towards the end of October a similar feeling came on in the fingers, and afterwards the hands, the feeling being accompanied with loss of power and stiffness, the symptoms also becoming gradually more intense.

On admission it was found that there was nothing important wrong except in the nervous system.

Sensory Functions.—He had pain of a tingling character in both legs, from the knee to the dorsum of the foot, with numbness, a feeling of cold in the toes and plantar surfaces; so also in the hands, but to a less extent. There was no girdle pain, formication, or giddiness. Sensibility to touch was diminished in the legs below the knees, and in the hands. The transmission of impressions was delayed, and he had difficulty in localizing them. Sensibility to heat, tickling, and pain were all diminished. Muscular sense, normal in the hands, appeared almost absent in right foot, and diminished in left. Sight appeared normal, but he complained of objects dancing before the eyes. There was no nystagmus. The other special senses were normal.

Motor Functions.—Organic reflex functions normal. The skin reflex absent in soles. The cremasteric reflex and that of the trunk well marked. The patellar tendon reflex absent in both legs. Voluntary motion was greatly impaired in legs and hands. The fingers remained in a semi-flexed position. Electric sensibility and irritability much diminished in legs and forearms, specially the extensor muscles. Attempt to use the muscles produced great pain.

Vasomotor and Nutritive Functions were normal.

Cerebral and Mental Functions were somewhat impaired. He was drowsy; memory imperfect. Although he conversed tolerably well, he made mistakes, such as calling every day Sunday. The cranium and spine were normal.

On the 17th some degree of improvement is reported to have existed, but a few days later the patient was seized with croupous pneumonia of both lungs, of which he died on 4th December.

It was clear that these three cases closely resembled one another, that they were, in fact, examples of one malady. The clinical features which seemed most important were, *the co-existence of symptoms referable to the sensory, the motor, and the trophic functions of the nerves, the localization of the symptoms in the feet and hands, the intensity being greatest at the most distal points, and the affection corresponding to certain districts of the extremities, and not to the distribution-areas of particular nerves.*

On endeavouring to arrive at a diagnosis of the lesion causing these symptoms, it was evident that it must be referred either to the nerves, the spinal cord, or the brain. Now, it was certain that no known facts warrant our believing that any individual part of the brain determines all kinds of innervation in individual parts of the body, and still less that lesion of any part should be capable of producing symptoms so curiously distributed. If we were to assume a cerebral origin, we should have to conclude that the lesion was bilateral, and that in several points of both hemispheres lesions existed. It was thus certain that the disease could not be regarded as cerebral. It might have been of spinal origin, and due to some affection of the cord at a point corresponding to the origins of nerves for the feet and the hands; but here again it was manifest that the lesion must be assumed to be bilateral and sufficiently extensive on each side as to involve sensory, motor, and trophic structures, but at the same time to affect these only so as to produce symptoms involving the ultimate distribution of certain nerves, and the different nerves in such proportion as to mark off precisely certain areas bounded by lines encircling the limb. Moreover, it would be necessary to assume that the lesion affecting the hands was so distributed as not to interfere with the transmission of sensory impressions from lower parts of the body upwards, nor of motor impulses from the cerebrum downwards to certain muscles, which conclusions it is impossible to regard as consistent with our present knowledge of the physiology of the cord. Moreover, the exact distribution of the symptoms in another respect forbade our accepting this hypothesis, because, in one of the cases, the affection of sensation and of motion was most intense upon the same side of the body, while, according to the law discovered by Brown-Sequard, and illustrated in a vast number of clinical cases, disease of one-half of the cord produces paralysis of motion on the one side and of sensation on the other. It was thus apparent that this view also could not be accepted. By a process of exclusion, then, I was led to conclude that the *nerves themselves must be the seat of disease*, and a consideration of the symptoms afforded direct evidence of this. What but a nerve lesion could have induced so curiously distributed an abnormality of all the functions?

The diagnosis was established after a study of the first two cases. One of them was demonstrated to the class of clinical medicine as an example of peripheral paralysis, and the third was at once recognised as another example of the same disease. It seems to me that the clinical features, even apart from pathological evidence, should satisfy any competent authority as to the nature of the disease; but the unfortunate occurrence of acute double pneumonia, with its fatal termination, in the third of my series of cases, gave us the opportunity of ascertaining the pathological changes, and the results of the examination, as reported by Dr Hamilton, are the following:—

On post-mortem examination both lungs were found to be much congested, the lower lobes in a state of red hepatization. The brain weighed 3 lbs. The vessels of the dura mater contained a medium amount of blood. The arachnoid space at the vertex was very œdematous. The left vertebral artery was smaller than the right; the left measured one line, the right two, in diameter. It looked like a congenital alteration, there not being any local cause. The medulla oblongata, in the neighbourhood of the Corpora Olivaria, was slightly indurated; otherwise it appeared healthy. Most of the nerves of the extremities, the spinal cord, and the brain were retained, and carefully hardened in Müller's fluid and spirit.

The brain was carefully examined by a series of perpendicular large sections, but no gross lesion, further than a little distention of the fifth ventricle, existed.

The spinal cord in the highest cervical and lower dorsal regions was healthy, but in the cervical enlargement, and to a less extent in the lumbar, there were what appeared to be certain tracts of secondary degeneration. They were extremely sharply defined at the margin, but very faint, and affected only the columns of Goll and the outermost part, particularly towards the back of the lateral columns.

CASE OF PARALYSIS OF HANDS AND FEET FROM DISEASE OF NERVES.

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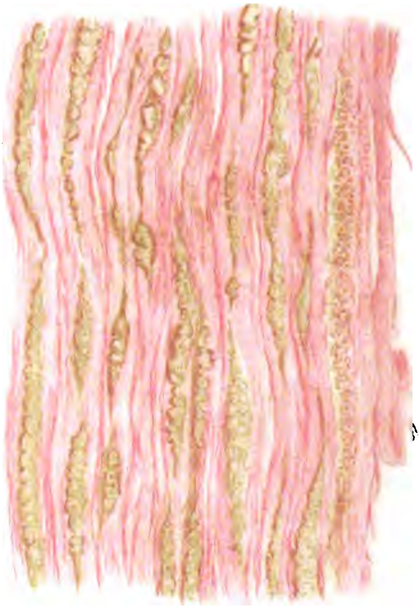

Longitudinal Section of Portion of Right Median Nerve (300 Diameters).—Drawn from nature by Mr JOHN THOMSON.

The median, ulnar, and tibial nerves showed more notable change than any other part. Looked at with a low power in transverse section, certain bundles of nerve fibres appeared to be totally destroyed from what looked like fatty degeneration; others were only partially destroyed, while some were comparatively healthy. In the ulnars the degeneration was less evident than in the medians. In the medians there was hardly a sound bundle of fibres.

Under a higher power (300 diam.) the degeneration presented the following characters (see Plate):—It began by a swelling of the axis cylinder, so as to form a number of fusiform bodies in the course of the nerve tube. These, when they had reached a certain size, divided into a number of rounded bodies varying in size, but mostly considerably larger than a leucocyte. They were perfectly homogeneous, and resembled ordinary colloid bodies in every respect. The whole course of the axis cylinder thus underwent degeneration. When the colloid masses were set free they mostly underwent fatty degeneration, forming compound granular corpuscles. In some strands of the fibres the whole of the axis cylinders were destroyed, and nothing but a quantity of fibrous tissue remained. Two cords of the brachial plexus were examined. In neither was there any evidence of the disease as seen in the lower nerves of the limb. Most of the bundles of nerve fibres appeared normal. One or two tracts may have been a little abnormal, but there were none of the axis cylinder changes as in the nerves of the forearm. Any change there may have been would in all probability be secondary, and not of the same nature as the primary alteration in the peripheral parts of the nerves. Both sciatic nerves seemed to be healthy. There were certainly none of the axis cylinder alterations found lower down. There seemed, however, to be an unusually great quantity of fat between the bundles of nerve fibres. The only piece of muscle which was retained was attached to the brachial plexus. It was perfectly healthy, the striæ upon it unusually well marked.

The first question which we have to settle is, whether the result of the autopsy confirmed the diagnosis which we had established of paralysis from disease of nerves. Manifestly there was no affection of the brain; but the cord was distinctly diseased, and it might be held that that disease was the cause of the symptoms. Observe its distribution. It was situated only in part of the cervical enlargement, and to a less extent in the lumbar enlargement, and affected the columns of Goll on both sides, and also the most superficial and posterior part of the lateral columns, including part of what Flechsig terms the direct cerebellar tracts. It did not affect any part of the gray matter, neither were the nerve roots involved. This localization is distinctive of what is known as one of the forms of Turck's secondary degenerations.

I may be permitted briefly to remind the members of the Society of the leading facts connected with these secondary degenerations. They are changes in certain strands of fibres in the brain and spinal cord which are found to follow upon diseases of the brain and cord. They are of two groups, the descending and the ascending; and sometimes we can trace, in connexion with a localized lesion in the cord, the descending below and the ascending above the seat of lesion. In descending lesions following upon disease of one hemisphere of the brain the changes manifest themselves in what are known as the pyramidal fibres, which are situated partly in the lateral column of the opposite side of the cord (the crossed pyramidal fibres) and partly in the anterior columns of the same side (the direct pyramidal fibres). In cases of descending degenerations secondary to lesion of the cord both sides are commonly affected. In ascending secondary degenerations, on the other hand, the columns of Goll are constantly affected, and along with them certain of the superficial or external fibres of the lateral columns. The lesion in our case occupied precisely these situations, and I have therefore no hesitation in accepting the view that the changes are purely secondary, and could not explain the symptoms manifested by our patient. But it is worth while to inquire what was the cause of the secondary degenerations. Are they to be referred to the nerves? I cannot doubt that they are; and yet it is most interesting to observe that it cannot have been propagated by direct continuity of morbid process, for it was the lower stretches of the nerves that were found affected, the cords of the brachial plexus and the sciatic showing, so far as Dr Hamilton could ascertain, but little change.

As to the nerves themselves, the lesion was extremely distinct. It involved a large proportion of the nerve fibres of the affected portions of nerves, and consisted in a breaking up of the axis cylinder; but to the naked eye the nerve appeared quite normal, the affected parts of the median and radial being undistinguishable from the unaffected parts farther up. A consideration of these facts must satisfy every competent authority that the diagnosis in our fatal case was amply justified. If this be so, I think it will scarcely be doubted that in the other two cases in which, on the same grounds, the same diagnosis was established we are entitled to conclude that the view taken was also correct.

Much remains still to be learned regarding the details and the course of the anatomical change. I do not think it at all likely that the process originated in muscle and spread thence to nerves seeing that the sensory changes were manifest before the motor. I greatly regret that we are not able to say anything at present with regard to the condition of the nerve endings, but from all the facts I am satisfied that the process had originated in the periphery of the nerves and spread upwards.

It is a question full of interest, though not at present susceptible of satisfactory answer, What are the conditions which induce the process? Is it cold? Is it some poison introduced from without? Is it some poison generated within the system? or may the process owe its origin to any of these? The fact that the disease originates simultaneously, or almost simultaneously, in both the hands and in both the feet seems to point to some constitutional cause; and although in the meantime we must leave the question of its nature unsolved, it is well that we should state it to ourselves, so that we may be less likely to neglect an opportunity of clearing it up.

The occurrence of peripheral paralysis is, of course, familiar to every practitioner, but it is generally in connexion with the three following groups that we are accustomed to think of it. We are all familiar with such peripheral paralyses as that of the portio dura of the seventh cranial nerve (Bell's paralysis), or the oculomotor paralysis involving ptosis and strabismus. We also know well the forms of local paralysis resulting from pressure on nerve trunks, as, for example, when a patient has fallen asleep in such an attitude as leads to pressure upon a particular nerve or group of nerves, and awakes with the limb paralyzed as to sensation and motion. Again, we are more or less familiar with cases in which, from some unexplained cause, an individual nerve becomes paralyzed, and for a longer or shorter time its function continues in abeyance; but it is clear that the cases which I have described belong to a quite different category from these, and I must acknowledge that to me at least they were not definitely known until the study of these cases defined them to me.

On referring to the literature of nervous disease, I find very few cases corresponding to it accurately described. In the admirable works of Wilks, Hammond, Rosenthal, Eulenburg, Hamilton, Leyden, and Erb, I have failed to find satisfactory clinical accounts of the disease, although there are indications in most of these works that cases more or less analogous have come under the notice of the authors. In the periodical literature of recent years, however, similar cases are to be found, and I think it may be well briefly to refer to those to which I have had access. The earliest references to cases of this description are those of M. Duménil of Rouen, published in the *Gazette Hebdomadaire* for 1864 and 1866. The first of his observations was made on the case of a man, æt. 71, who was suddenly seized with numbness in arms and feet, followed by paralysis, anæsthesia, muscular atrophy, etc. After death the brain, spinal cord, and nerve roots were found to be normal, while the nerves themselves were the seat of extensive degeneration. Duménil points out the close analogy between this condition and the general spinal paralysis of Duchenne. In his second paper on the subject the same writer gives one case with similar symptoms in great detail, in which he found, after death, extensive degeneration of nerves, anterior nerve roots, and spinal cord. He believes that the facts he gives warrant him in concluding that "a class of spontaneous peripheral paralyses exists due to atrophy of the nerves. The morbid process which produces these atrophies is inflammatory in its nature in many, if not in all cases. These paralyses may affect motion and sensation with equal intensity, either simultaneously or successively, and in the latter case motion appears to be affected by reflex action. . . . . The morbid process which produces these symptoms may ascend and reach the spinal cord, where it leaves distinct traces."

Almost with certainty we may conclude that a case which M. Bablon[1] describes in some detail was of the same nature as those which form the subject of the present communication. Bablon, however, gives it as a case of acute ascending paralysis. In doing so he apparently errs.

In 1876 Eichhorst published[2] details of a case which he diagnosed as "acute progressive neuritis." The patient, a woman æt. 66, was suddenly seized with complete paralysis of the left superficial peroneal nerve, ushered in by severe boring pains, and accompanied by feelings of numbness, formication, profuse sweating, and followed by complete anæsthesia. Other nerves of arms and legs were subsequently seized upon by the morbid process, so that at length the patient lay completely paralyzed in both upper and lower extremities. Complete blindness set in forty-eight hours before death. At the autopsy it was found that while the brain and cord were normal, the peripheral nerves were extensively degenerated.

A case described by Eisenlohr[3] in 1879 resembles those I have already detailed to the Society, in that while brain and cord were found after death to be normal, the nerves were the seat of degenerative changes. It differs, however, in this important particular, viz., that no anæsthesia existed over the affected regions, but, on the contrary, there was hyperæsthesia of the skin on the soles of the feet. In other respects the symptoms closely resemble those of our cases.

In 1879 Joffroy published[4] a most important contribution to the history of neuritis, which contains records of various cases. The most important of these was that of a woman, æt. 33, suffering from phthisis. On admission to the hospital it was seen that her lower limbs were paralyzed. This paralysis gradually spread upwards, but there was no abnormality in the sensibility to touch, heat, or pain. The movements of her hands were not ataxic, but she had lost all sense of position in the lower limbs, could not point to her toe or heel when her eyes were shut, or even know whether her legs were crossed or not. About twenty days after admission her arms became similarly affected. She died of phthisis, and on post-mortem examination the brain and cord were found to be healthy, while the nerves were degenerated. Joffroy points out and lays weight upon the fact that the sensibility was unaffected, and argues in favour of the parenchymatous nature of the inflammatory process, for in the case of interstitial neuritis the inflammation would not have attacked only the motor fibres of a mixed nerve, leaving the sensory fibres untouched. It is, however, difficult to allow M. Joffroy his premises, for it may be asked whether the sensibility could be perfect in the legs when she was unable to tell whether they were crossed over one another or not without looking at them.

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[1] *Gaz. Hebd.*, Dec. 1864.

[2] Virchow's *Archiv.*, Bd. 69.

[3] *Centralblatt f. Nervenheilkunde*, 1879.

[4] *Archives de physiologie*, vol. vi. p. 172.

In an able and most valuable paper published by Professor Leyden in the *Zeitschrift für Klin. Medizin* in the end of last year, he gives a general *résumé* of the subject and a detailed account of two cases in which he had opportunity of making post-mortem examinations. The first was in a sailor, æt. 28, who was admitted to the wards in February 1878. He had had fever and sharp tearing pains for some days in arms and legs, apparently proceeding from knees and elbows. The soft parts below knees and elbows were swollen and white, very sensitive on pressure. In the fingers and toes was a painful feeling of formication and diminution of sensibility. Use of the limbs was markedly diminished—a kind of lameness. After some days the fever diminished, also the fulness and sensitiveness, but instead there came distinct muscular atrophy, especially in the extensor muscles of the arm. In the course of some months the legs got quite well, but the arms got worse —claw-like hands suggesting lead-poisoning, while the muscles showed the reaction of degeneration. Patient died of atrophy of kidney a year after illness commenced. The nerves of the affected part were found to be in a state of sclerotic atrophy. The anterior spinal roots were normal, as was also the cord and the nerves of the lower extremities. He gives in great detail another case of a merchant who, two years after the commencement of certain other nervous symptoms, became affected with paralysis of motion and sensation in hands and feet, corresponding, as he remarks, to the subacute spinal paralysis of Duchenne. The autopsy showed degenerative multiple neuritis, and no affection of the spinal cord itself beyond a little swelling of some of the ganglion cells here and there, with vacuoles.

Such are, I believe, the only cases on record corresponding to those which I have brought before you.

From the facts observed in the cases which I have recorded, taken along with those recorded by others, and with some which, looking back, I now regard as examples of this condition, I find data for drawing up a clinical history of the disease, which seems to me quite distinctive. Its commencement is usually acute and attended by more or less fever. While all the functions of the nerves speedily become affected, it is in connexion with the sensory functions that the first changes manifest themselves. Sometimes there is acute pain, but oftener a numbness or peculiar tingling sensation in the affected parts, closely resembling the feeling popularly known as sleeping of the limb —a feeling which is more like this from the circumstance that action of the muscles or pressure upon the skin induces the uneasy or painful sensation commonly known as pins and needles. Along with this there is a distinct diminution of sensibility. Touch is felt indistinctly; two points so far removed from one another as to be distinguished in the healthy conditions are no longer distinguished, and the patient may have the greatest difficulty in localizing the impression which he feels. Sensory impressions are conducted slowly, and at the same time contact is felt painful. These feelings may begin simultaneously in the fingers and in the toes, or may affect first the one and then the other. It seems to be usually in both hands and both feet simultaneously, but not necessarily in an equal degree.

To these sensory changes motor symptoms speedily become superadded. At first there is mere paresis, and affecting the most distal parts; but the paresis spreads up the limb from one group of muscles to another, and as it does so the intensity of the process deepens in the parts first affected. The organic reflexes are very rarely affected, although when the disease spreads upwards it is sometimes found that those connected with the bladder, and perhaps the bowel, are involved. The skin reflexes are modified in proportion to the diminution of sensibility in the parts, being sometimes entirely absent, sometimes absent on slight stimulation, but present even in an exaggerated degree when a strong stimulus is applied. The plantar reflex is often altered, while those higher in the body are natural. The tendon reflex, and especially the patellar tendon reflex, appears to be early and completely lost in these cases. Ankle clonus may be present after the patellar tendon reflex is lost. With regard to voluntary motion, it is found that in some of the muscles it is absolutely lost; in others it is diminished to a greater or less extent. Within a week of the commencement of the seizure it may be found that the patient has no power of flexing or extending the toes and fingers, but retains power of movement of the ankles or the wrist. A week or two later these movements also have become lost, and ere long perhaps the legs and arms in their whole extent are absolutely helpless. There is no special interference with the co-ordinating functions. With regard to the reaction of degeneration, I have not been able to satisfy myself in the cases which I have observed.

The vasomotor and trophic changes manifest themselves most distinctly in the muscles which undergo atrophy—much more rapidly than would be the case in simple motor paralysis. The colour and texture of the skin, also, sometimes change from the normal, patches of congestion or of blueness appearing here and

there, and glossiness manifesting itself, especially in the fingers. The nutrition of the nails also becomes altered. In several of the cases I have seen a very distinct degree of œdema not referable to any other than a nervous cause. The intelligence is perfect, and sleep is satisfactory except in so far as it may be disturbed by pain. There is no alteration of the condition of the spine or cranium.

The process may take some weeks, or perhaps months, to arrive at its full development. After a time it appears usually to become arrested, but at first no improvement is manifested. Gradually, however, the patient begins to notice some improvement. His pains or uneasy feelings diminish, sensitiveness to impressions increases, and he begins to feel that his power over the muscles is returning. It is in the upper part of the limb that improvement first sets in. It gradually passes downwards, until at length there is complete recovery. The process may occupy a period of from two to six or more months.

The recovery from such a condition as this seems to me most remarkable. It would appear to one examining the lesion as if it must necessarily permanently destroy the nerve; and yet we must assume that recovery does actually take place, and that in no inconsiderable proportion of the cases. But what is even more remarkable is, that the process may recur in the same individual and in the same parts time after time. I have met with at least one case in which this apparently occurred three successive times within a few years.

In some cases, probably, the disease extends to involve the cord, and perhaps to pass into myelitis. In Case II. it seemed, from the girdle pain and the bladder symptoms, that this was to some extent the case, for we must either assume that it was so, or that the nerves of these parts were affected in the same way as those of the hands and feet; and in Case III., as I have shown you, some extension of the disease to the cord existed, although merely of the kind which is described as secondary degeneration. In the second case recorded by Duménil distinct changes were present; and in one of Leyden's cases there was a little swelling of some of the ganglion cells in the cord, with vacuole formation. It remains to be ascertained from observation of future cases whether this is a frequent result or not.

The rapidly fatal result of the pneumonia in Case III. shows that the superaddition of any acute disease must be regarded as most formidable where this disease exists. Should I meet with another case of the kind, I should investigate most carefully the condition of the nerves supplying the inflamed part.

But while recovery occurs in a considerable proportion of cases, it is not the invariable result. In some the process induces permanent atrophy of the nerves, with consequent paralysis. In others extension of the disease may take place, and vital nerves or vital nerve centres becoming affected, death must follow. Further observation will show the proportions in which these various results occur.

I have no doubt that it will occur to many of you that probably in this disease we find the means of explanation of cases which we have regarded vaguely as spinal congestion, slight myelitis, or such like; and I expect that it will prove that cases of this kind are not very uncommon. I, at least, on looking back, can recall some in which I think I should now find the explanation by reference to this process.

If it be true that in some instances fibres of all kinds in mixed nerves may be thus affected, it seems reasonable to believe that in individual mixed nerves either the motor fibres alone, or the sensory fibres alone, might be the seat of change. And if so, we should expect to find in the former a clinical history closely resembling Landry's acute ascending paralysis; in the latter, certain forms of neuralgia with loss of sensibility.

It remains for me to mark off the clinical history thus sketched from those proper to some other affections with which, at first sight, it might be confounded. It resembles at first sight and in some respects the Acute Ascending Paralysis to which I have just referred, which was first described in 1859 by Dr Landry. In it there is paralysis commencing at the distal parts and spreading upwards, sometimes terminating in recovery, sometimes extending to vital centres and so proving fatal. In the cases which do prove fatal no lesion has been found. The disease which I am bringing before you to-night differs from it in that it affects the sensory as well as the motor functions, and exhibits well-marked pathological changes. But the processes may, on further examination, turn out to be related to one another in the way I have just suggested. It also very naturally suggests the form of disease which was described in 1853 by Duchenne under the name of General Spinal Paralysis, and which he afterwards spoke of as Anterior Spinal Paralysis, acute and subacute, in which the lesion was more accurately defined by Charcot and Joffroy, and which has been termed by Kussmaul and Erb, Poliomyelitis anterior, by Westphal, Acute Atrophic Spinal Paralysis of adults, and by Eulenburg, Acute and Subacute Spinal Paralysis of adults. In that disease the lesion is situated in the anterior horns of gray matter, and the clinical features are well defined. Commencing generally acutely with some degree of febrile disturbance, there is developed paresis of the limbs, which rapidly passes into paralysis with speedy wasting of the muscles. It spreads from the legs upwards. The same process may occur in the arms; it may, indeed, begin in the two places simultaneously gradually advancing in the trunk as the cord becomes more extensively affected. The process may extend to vital structures and prove fatal, or it may become arrested and complete recovery take place, but throughout the course of the disease there is no affection of the sensory functions. Peripheral Paralysis of the kind we are describing differs from it in that it affects the sensory as well as the motor and trophic functions, and that it is so distinctly ascending in the limb it involves, while pathologically the changes are essentially different; and thus, although one of the most careful and distinguished of living workers in neurology, Professor Leyden of Berlin, draws special attention to the resemblance between them, it is yet clear that they are to be readily distinguished from one another.

There should be little tendency to associate this disease with Acute Transverse Myelitis, a malady in which the whole of the strands of the cord are diseased at the same point, for in that disease it commences to manifest itself at once at all points below the seat of disease, and does not spread upwards, as in our malady; moreover, in myelitis there is a marked tendency to alterations of the organic reflexes, to sloughing of skin, alkalinity of urine, and vesical catarrh, none of which occur in the malady we are considering.

Certain forms of diphtheritic paralysis more or less closely resemble the disease under consideration; but they may be readily distinguished by the fact that there is no history of any throat affection, no tendency to paralysis of laryngeal or pharyngeal muscles, nor is the distribution of the malady at all like what is seen in post-diphtheritic cases. It is interesting to remember in this connexion that in some cases of diphtheritic paralysis Charcot and Vulpian have found a distinct lesion of the nerves of the affected parts, and that this has been confirmed by others. It will be interesting to ascertain how close the resemblance between them may be.

One of the main points of interest in connexion with this disease is the light which it appears fitted to throw upon some obscure questions in nervous pathology; among these I may mention Locomotor Ataxia. You are all aware how frequently that disease is heralded by passing nervous attacks of various kinds, sometimes paralytic, affecting one nerve or some particular branch of a nerve, and generally after a time disappearing, but sometimes persisting. Such paralyses may be best explained by assuming them to be due to this disease. But, again, girdle pains often appear as an early symptom, and may be also quite reasonably referred to such a malady, for the girdle pain is usually associated with hyperæsthesia, and while it sometimes entirely disappears, it sometimes also produces a permanent anæsthesia of the region affected. Another very distressing symptom is that which is known as "lightning pains," which may be due to disease of the sensory fibres; and in cases of locomotor ataxia it must have struck many observers how strangely pain, hyperæsthesia, and anæsthesia may come and go in certain parts in a way that seems scarcely explicable unless on the hypothesis of local nerve change. In regard to the eye changes, the temporary and passing amauroses, and other symptoms connected with special sense, I may refer to some facts recorded by Dr Althaus.[1] Having referred to the optic neuritis as being well known in association with Locomotor Ataxia, he gives cases in which the olfactory and auditory nerves were the seat of disease, resulting in alteration or destruction of the functions of these nerves.

It is interesting to know that while, from clinical considerations, I was led to this view of these symptoms, Dr Hamilton has been led in the same direction by his pathological observations. It has, indeed, long been known that atrophy of cranial nerves occurs in the course of locomotor ataxia, but what I have brought before you to-night is fitted to clear up our conceptions on the matter.

Another point of practical interest is the light that this may be fitted to throw on the beneficial effects of nerve-stretching. The demonstration of such changes as these may be followed one day by proof that some allied change exists in the axis cylinder of nerves in the cases which are benefited by nerve-stretching. And taking together what we have said regarding locomotor ataxia and this plan of treatment, the thought will naturally occur that we may herein find the explanation of the marvellous results of nerve-stretching recently described as having occurred in that disease.

With regard to treatment I cannot as yet speak very positively. Certainly strychnia seems injurious in the early stage and beneficial in the later, while ergot of rye seems to be useful in the early periods. It remains to be seen whether nerve-stretching is applicable or not at any stage. Many remedies may be useful for relieving pain — quinine, salicylic acid, salicylate of soda, morphia. During the period of advance the patient should be kept at rest. When the acute stage has passed, friction, electricity, passive and then active exercise, should be carefully tried.

ARTICLE II.—*Case of Splanchnic Inversion in an Athletic Young Man aged Nineteen: with Remarks on the Cause and the Diagnosis of Congenital Transposition of Viscera.* By Sir JOHN ROSE CORMACK, M.D. Edin.; M.D. Paris; Fellow of the Royal College of Physicians of London; Member of the Société Clinique of Paris; Physician to the Hertford British Hospital of Paris; Chevalier de la Légion d'Honneur.

(*Read before the Société Clinique de Paris, March* 1881.)

CONGENITAL Transposition of Viscera, or Splanchnic Inversion, has been discovered more frequently after death than during life; and oftener in the bodies of very young children, than in adults.

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[1] Althaus "On the Pathology of Peripheral Nerve Disease," *American Journal of the Medical Sciences*, 1879.

A large proportion of the recorded examples have been met with in malformed, non-viable fœtuses. Nevertheless, as in the case which I am about to describe, maturity and vigorous health are compatible with this interesting and rare peculiarity. In exceptional cases, some only of the asymmetrical organs are transposed; but generally, when transposition exists, all the organs are transposed from right to left, or *vice versâ*, so that when the thoracic and abdominal walls are removed they present exactly the appearance of their normal situation reflected in a mirror. The phenomenon which has led to the discovery during life of a certain number of cases of splanchnic inversion is dextro-cardia, or transposition of the heart to the right. This condition is the primary cause of the general transposition. Paul Broca was the first to call attention to the fact that when two fœtuses are united by their ventral surfaces, one of the two has transposition of all the viscera.

The proportion of cases of splanchnic inversion which occur in one thousand, in ten thousand, or in any number of persons, cannot be estimated. So far back as 1650, Riolan recorded a case of transposition of viscera; but from that date to the commencement of the present century, few additional cases were published. During the present century, a certain number of cases have been recorded as having been discovered during life; but the number is numerically very small, when we recollect the vast number of competent physicians who have, during that period, been daily engaged in making minute physical examinations of the chest, and in the habit of publishing their more remarkable experiences. The principal pathological museums contain specimens: there are five in the Musée Dupuytren of Paris. When I met with the case about to be described, I wrote to six personal friends—all eminent clinicians—asking them to answer certain queries, and to state whether they had met with any case similar to my own, of which I sent to each the leading facts, accompanied by a rough diagram. From all I received useful information; but all, except Dr W. H. Walshe, said that they had not met with a case of congenital dextrocardia. With the permission of Dr Walshe, I subjoin an extract from his letter, dated 14th April 1878:—“Your case is evidently, from the position of the liver, one of congenital transposition of various organs. In the course of a tolerably lengthened clinical life I have never seen but one case of the kind. By one of those odd coincidences that every now and then occur—odd, I mean, in reference to your communication—I saw about ten days ago, in this room, a lad 17 or 18 years of age, in whom the heart lay over a little more to the right than in your diagram, and in whom the liver and spleen were normally placed, while there was no present physical sign, nor any antecedent history showing the existence of pulmonary, pleuritic, hepatic, mediastinal, aortic, or tractive disease which could explain the misplacement of the heart. Such cases must be infinitely rare. I never heard or read of even one such case that I can now call to mind; though from a passage in my own fourth edition *On the Heart* (p. 417), I infer that formerly I must have heard of such a state of things."

The discovery during life of splanchnic inversion in a healthy adult is a sufficiently unusual occurrence to demand attention; and to be placed on record in as complete a form as possible, in respect to the age, the family history, the health-history of the subject, and the circumstances which led to the discovery of this abnormality. I shall therefore present to the Society the facts of a case in the manner, and nearly in the order, in which they came before me, at the risk of introducing minor details which may appear unimportant or even irrelevant. It is better to err a little on the side of prolixity in recording what are popularly called the "freaks of nature," than to suppress circumstances which may afterwards contribute, even in a small degree, to purposes of accurate comparison and classification. I make these remarks after completing an extensive and careful perusal of the literature of the subject, and observing the imperfection of many of the histories.

On Tuesday, 27th of March 1877, late in the evening, an English gentleman requested me to accompany him to Passy without delay, to visit his son, whom he had just found, on his arrival from England, to be alarmingly ill, the symptoms being, he said, those of typhoid fever, in the opinion of the family with whom his son lived. He described his son as a healthy young man, subject to no ailment except severe headaches in childhood, who for years past had been in the habit of following the fox-hounds, eagerly participating in athletic sports, and delighting in all sorts of gymnastic exercises. The father had arrived in Paris only a few hours before he came for me; and it had been his intention to proceed next day to join his family in the south of France. Finding his son so unwell, he resolved to delay his journey and seek my advice.

When I reached the patient about 11 P.M., I found him very restless and excited; but free from delirium. He answered my questions coherently, clearly, and intelligently. The countenance was deeply flushed, the eyes suffused, the conjunctivæ red from congestion, and the pupils, which were sensible to light, were considerably dilated. The skin of every part of the body communicated to the hand a burning sensation. By the thermometer the temperature in the axilla was 39° C. The veins of the neck were turgid, there was great throbbing of the carotid and temporal arteries. The pulse at the wrist was 130, feeble and dicrotous. The respirations at the commencement of the examinations were 32, and towards the close, that is, half an hour later, 38 in the minute. He complained of intense general headache, by which for three days and three nights he had been prevented from sleeping. In reply to my inquiries, he stated that he could not say whether the pain was most severe in the forehead, occiput, or temples. Except in the head, he said that he had no pain whatever. He implored me to relieve his distracting headache, which for three days and three nights had ceaselessly tortured him, and had caused insomnia, restlessness, and intolerable mental distress. The tongue was parched, and coated with a dirty yellowish fur. He stated that his urine was scanty, and I saw a small quantity in the vessel, which was turbid and in colour like porter: this I requested to be reserved for chemical examination, but the attendant misunderstood me, and it was thrown away. Some hours before I saw him, his bowels had been freely opened. There was no abdominal distention nor uneasiness, nor was there tenderness or gurgling in the right iliac fossa. No eruption was anywhere visible on the skin. The symptoms, therefore, did not lead me to believe in the existence of typhoid fever. On examining the chest, I was at first impressed with the idea that I had to deal with a case in which the heart was displaced by extensive pleuritic effusion. As I proceeded with the examination, however, I soon found that my original impression was untenable. Looking at the naked chest, no want of symmetry was observable. There was no bulging of the intercostal spaces. On the left side of the chest, with the exception of slight mucous râles, a normal respiratory murmur was heard, both before and behind, from the summit to the base of the lung. The normal cardiac dulness of the left side did not exist. Auscultation and percussion of the right side showed that the right lung was in a state similar to the left, that is to say, in almost a natural condition. The heart occupied pretty much the situation on the right side which it ought to have occupied on the left. The cardiac sounds and rhythm were normal, excepting that they were somewhat influenced by palpitation. The facts now stated having been elicited, I suspected that I had before me a case of congenital transposition of the heart. I then proceeded to examine the hepatic region, and at once found that the liver was likewise transposed. I was unable to make out the situation of the spleen. Before I left the patient I had satisfied myself of the existence of the congenital abnormality known as *splanchnic inversion*.

It was obvious that the malady under which the patient laboured was independent of, and had to be treated irrespective of his congenital peculiarity. I prescribed a warm pediluvium, cooling lotions to the head, a purgative, and a potion containing one drachm of the bromide of potassium. A third of the bromide potion was to be taken every three hours.

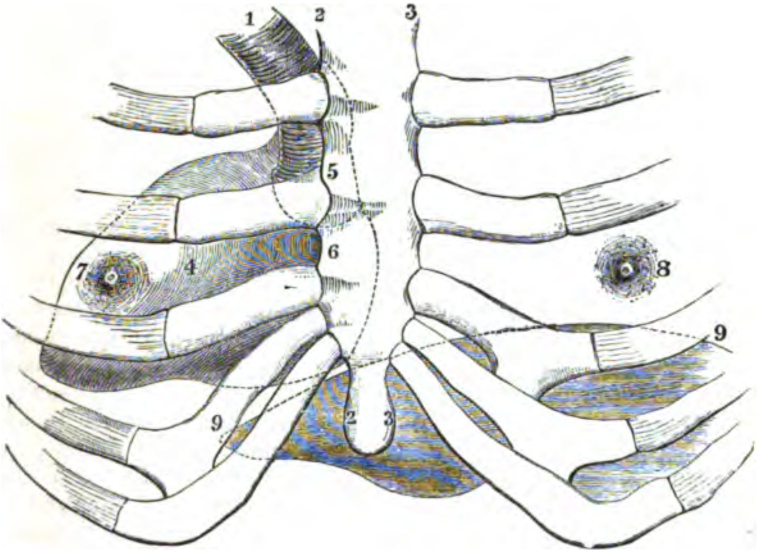
Next morning, Wednesday, 28th March, accompanied by Dr Greenway, then Clinical Assistant at the Hertford British Hospital, I made my second visit to the patient, when I carefully repeated my physical examination of the previous evening. He was less restless and excited, though, according to his own account and that of his attendant, he had not slept. After verifying the physical examination of the previous evening, I took, with Dr Greenway's assistance, sphygmographic tracings of the pulse, of which it is sufficient to state that they were characteristic of dicrotism and feeble cardiac action. The pulse was 100, and the respirations 30 in the minute; the temperature 38° C. Since my visit of the previous evening the patient had had no stool, and had passed but very little urine. About half an hour before my visit, that is to say, between 10 and 11 A.M., he had taken the last third of the bromide mixture. I prescribed the following mixture:—

℞. Decoct. cinch. flav., ℥vss.
Sp. vini Gallici, ℥ij.
Syr. aurantii, ʒiv.
Brom. potassii, ʒij. M.
Tablespoonful every two hours.

While I was with him, he took half an ounce of castor-oil. I ordered the nurse to administer a lavement of tepid water at the end of four hours should the castor-oil not have then operated. I saw him again at about 10 P.M., when he stated that he had not slept during the day, and that, although he had never been free from headache, there had been several long remissions, and that he had suffered very little from restlessness. The enema had been administered, with the effect of producing a large evacuation, which was hard and feculent. It was after this stool that the remission in the headache became very decided. He was ordered to continue the mixture prescribed in the morning, and to take with two successive doses 10 grains of the hydrate of chloral and 20 drops of the Brit. pharm. solution of the hydrochlorate of morphia.

On the 29th he was decidedly better. The nurse stated that the amendment was very marked, on his awakening from a sleep of two hours, which followed soon after the second dose of chloral and morphia. He continued to improve during the 30th and 31st March and 1st April, during which days his diet consisted of beef-tea, barley-water, and milk. Each evening he had 30 drops of the B.P. solution of hydrochlorate of morphia added to his cinchona mixture. On the morning of the 1st of April the temperature was 37° C., and did not afterwards rise more than occasionally three or four tenths. It is not necessary to report the daily progress of his recovery, which from this date was steady and rapid. On the 8th the pulse was of fair strength, and normal in every respect. On that day he discontinued the bromide of potassium and the nightly dose of hydrochlorate of morphia. On the 10th, 12th, and 14th April, he drove out for two or three hours; and on each of these days, in the course of his drive, came to see me at my house.

Upon one of these occasions—the 10th April—he was, at my request, examined by Professor Peter. I was anxious to have my observations in respect to the transposition of viscera verified by so eminent an authority. Professor Peter entirely concurred with me as to the nature of the case, which he examined with great care and minuteness. Having ascertained, by auscultation and percussion, the great landmarks, so to speak, we indicated them on the patient's chest with the ordinary copying-ink used in offices. We then placed on the marked chest a moistened sheet of copying-paper. From the map so obtained, I afterwards constructed the annexed diagram, which shows the situation of the heart, aorta, and liver, together with the points of maximum intensity of the sounds of the sigmoid and mitral valves.—



1. Ascending aorta.
2. Right border of sternum.
3. Left border of sternum.
4. Heart.
5. Maximum intensity of sigmoid valvular sound.
6. Maximum intensity of mitral valvular sound.
7. Right nipple.
8. Left nipple.
9, 9. Liver—upper limit of hepatic dulness.

The transverse dulness of the aorta measured 4 centimetres. The dulness of the great oblique diameter of the heart measured 13 centimetres. The hepatic dulness, in a line parallel with the left nipple, measured 8·5 centimetres. These measurements were carefully taken by Professor Peter.

About the 1st May, G. R.'s health being perfectly restored, he resumed his military duties with his regiment, then in barracks in England.

I had the pleasure of seeing the patient's mother some weeks later, in her passage through Paris, on her homeward journey to England from the Riviera. In reply to my questions, I obtained the information embodied in the subjoined memorandum, which I give exactly as it was written and corrected at our interview:—

"My son G. R. was born on 17th August 1858. In his childhood he was healthy, but not strong. Till he attained the age of nine or ten years, he suffered about once a week from severe headache, arising from different and apparently slight causes, such as a little extra fatigue or an error in diet. In early childhood he had whooping-cough, measles, and chicken-pox, and in passing through all of them he suffered much from headache. When thirteen years of age he went to the school of Harrow. He was then a strong boy. From that date, till his break down at Passy in March, I never heard of his having suffered from headache. Since the age of thirteen he has been in the habit of hunting, playing at football, and taking a large part in gymnastics. His hunting involved following the hounds on horseback for six or seven consecutive hours, preceded and followed by an hour's railway journey."

The probability is that splanchnic inversion does not go in families; but the data on which to base an opinion do not yet exist. In connexion, nevertheless, with the case of G. R., I was interested with what his mother told me regarding a probably congenital cardiac peculiarity in her daughter, a healthy-looking young lady of eleven years of age, whom she introduced to me; and whose chest I was allowed to examine by percussion and auscultation. The mother stated that no peculiarity was observed at birth, nor till the child had attained three years of age, when she was seized, after a fit of passionate emotion, with a fainting-fit, blueness of the lips and face, insensibility, and clenching of the hands. For this attack Dr West (late of London, now of Nice) was consulted. She soon recovered; but Dr West stated, that to prevent the recurrence of the symptoms, great attention would be necessary in her bringing-up, with a view to the avoidance of all causes of excitement. When nine years of age she had a second attack, which was very similar in its manifestations to that which led to Dr West being consulted. Since that time she has had no seizures nearly so serious as the two now mentioned. Many times, however, in later years, excitement, even when the cause has been seemingly slight, has been observed to induce deep purpling of the countenance, accompanied by a moderate degree of headache and mental confusion. When I examined her there was no trace of cyanosis, but her cheeks and lips were rather anæmic. Her pulse was 86. The area of cardiac dulness was abnormally large, and a gentle murmur was distinctly audible at the apex.

Guttmann (*Berliner Klin. Wochenschs.*, 1876: II., p. 150) states, from an analysis of more than a hundred cases—all the recorded cases he could discover—of splanchnic inversion, that it is much more frequent in the male than in the female sex, the proportion being two and a half to one. Others who have analyzed the literature of the subject have come to nearly a similar conclusion.

Left-handedness, according to some authors, is frequently met with in the subjects of splanchnic inversion. My patient, G. R., is not left-handed.

CAUSE OF CONGENITAL TRANSPOSITION OF VISCERA.

Embryological researches, particularly those of Carl Ernst von Baer, have greatly assisted in explaining the congenital transposition of viscera.

The matrix and its contained embryo are at first situated in the same plane as the surface of the vitelline vesicle. The embryo afterwards rises above the level of the vitelline vesicle, the nether extremity of which forms an arch the convexity of which is turned outwards, the head and the caudal extremity being turned downwards. At first this position is vertical; but it afterwards becomes lateral, causing the embryo to lie with its left side upon the umbilical vesicle. Deviations from these conditions may materially modify the development of the fœtus. Carl von Baer was the first to observe that the normal disposition, right and left, of the thoracic and abdominal viscera, is dependent upon the position of the embryo to the left; and that when the position of the embryo is to the right, the usual natural right and left disposition of the viscera is reversed. The viscera are transposed, and assume a form and relative disposition corresponding with their transposition. The right lung has generally two lobes, and the left has three lobes. The heart has its apex turned to the right; the vena cava opens into its left auricle. The other anatomical dispositions correspond with the changed situation of the chief thoracic organs. In the abdominal cavity the liver is situated in the left hypochondriac region; and its lobe which lies to the left has the form and size of the right lobe of a normally placed liver; and the lobe lying to the right has the form and size of a left lobe under normal conditions. The spleen and the fundus of the stomach lie in the right hypochondriac region. The duodenum descends from the pylorus towards the left; the jejunum lies more to the right and the ileum more to the left than is normal; the cæcum and ascending colon are on the left, and the descending colon and rectum on the right side. Many cases, however, present special diversities of their own, which are mostly undiscoverable during life. This remark is particularly applicable to the disposition of the arteries, veins, and spleen. Petrequin and others are of opinion that transposition of viscera proves the law of correlation of organs, and of the influence that ectopia of the heart exercises upon the organs of circulation and digestion. He is also of opinion that the lateral curvature of the dorsal column is due to the presence of the heart and aorta, and that it changes its side when there is transposition of these organs. Von Baer mentions that among the numerous chicken-embryos examined by him he met with one case in which the embryo had twisted itself abnormally to the right of the umbilical vesicle, and in which the heart, together with the other organs, were transposed. He regards this as a case of incipient transposition of viscera.

Geoffroy St Hilaire (*Histoire des Anomalies*, vol. ii. pp. 6–29), after combating Winslow's theory of anomalous germs, thus develops his own views on splanchnic inversion, which it must be recollected were published many years before the promulgation of the above-stated views of Von Baer.

"The recent progress of embryogeny tends to show the weakness and the errors of such theories. Not only do we at present know that the organs undergo displacement as well as metamorphosis during the course of their development; but new and ingenious theories have revealed to us a concatenation between the different parts of an apparatus and between the different apparatus themselves, and a mutual subordination, in such fashion that the evolution of each one is in a certain measure subordinate to and commanded by the evolution of those which preceded. It is, therefore, no longer necessary, as was formerly supposed, to give a special explanation to the displacement of each organ in particular; it is no longer necessary to suppose the influence, in each case of inversion, of causes and the combination of such a multiplicity of conditions that their number alone rendered them impossible; but it is easy to conceive that all these causes and conditions may be reduced to an only and primitive one—perturbation in the development of one organ dominating all the others, and carrying them on, in its wake, out of the usual paths. This theory enables us to consider the *ensemble* of the thoracic and abdominal viscera as a chain, the movement of which can be explained by that of its first link, and not as a complex of isolated links, each one influenced and put into motion by special and distinct forces."

"This explanation is not, as might be supposed, a simple hypothesis. The embryogenic observations of Mr Serres tend to consider the liver the normal dominating organ, as the first link of the chain—the real centre, around which all the other organs come and place themselves according to a rigorously determined order. According to Mr Serres, it is this voluminous viscus, so important during embryonic life, that, by the unequal development of its two lobes, originally equal and symmetrical, exerts an influence either mediate or immediate upon all the other organs contained in the thorax and abdomen, and determines their ultimate position in the interior of these two cavities. Now, it is evident that, if such be the explanation of the normal disposition of the thoracic and abdominal organs, it can also be that of their inversion. As Serres observes, it suffices to reproduce, with simple reversal of the terms, all the considerations applicable to the normal order, to be able to understand all the conditions of this anomaly so long considered inexplicable. It is generally the left lobe of the liver that becomes atrophied at the moment that this viscus ceases to be symmetrical; the aortic heart, the aorta, the bilobed lung, the spleen, the descending colon, and the large extremity of the stomach, are then to the left, while the pulmonary heart, the venæ cavæ, the azygos vein, the trilobed lung, the biliary vesicle, and the cæcum are to the right. In those rare cases, where there is splanchnic inversion, it is, on the contrary, the inverse portion of the liver, the right lobe, that becomes atrophied; and from this follows the inverse position of the aortic heart, of the aorta, of the bilobed lung, of the large extremity of the stomach, of the spleen, and of the descending colon, which will occupy the right side; while the pulmonary heart, the venæ cavæ, the azygos vein, the trilobed lung, and the cæcum will be transposed to the left."

Rindfleisch (in his *Lehrbuch der pathologischen Gewebslehre*, Leipzig, 1871, p. 218, u. 39, as quoted by *Burgl*) propounds the following theory to account for the production of dextro-cardia:—"Every column of liquid that under strong pressure flows through an elastic tube experiences a spiral torsion; and the same may be said, therefore, of the blood-column. This peculiarity extends to the vessel containing the liquid column: the primitive heart-bag consequently acts like a twisted cylinder, and, under normal conditions, like a cylinder twisted from left to right with an S-shaped spire; and the lower extremity of this spire, which at a later date constitutes the apex of the heart, will fall to the left. In the majority of individuals the blood-column turns spirally from left to right, and determines in this manner the usual position of the heart to the left. But should this rotation take place in the contrary direction, then the heart-bag comports itself like a cylinder twisted from right to left, the apex at the heart will now fall to the right, and the result will be a complete inversion of the non-symmetrical viscera, which are not formed until after the heart; and thus splanchnic inversion will be produced."

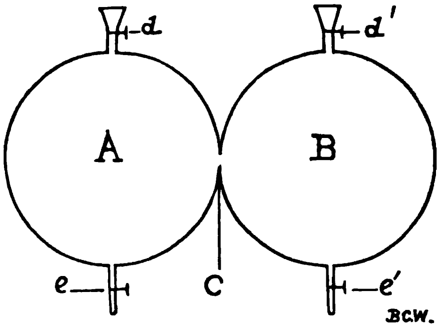
In the dextro-cardia of splanchnic inversion, the subject is frequently non-viable from malformation of the heart; and in the bodies of persons who have grown up with splanchnic inversion, curious deviations of structure, in addition to visceral inversion, have been found.

(*To be continued.*)

ARTICLE III.—*Lecture on Cyanosis.* By BRYAN CHARLES WALLER, M.D., F.R.C.S. (Ed.), Lecturer on Pathology in the Edinburgh School of Medicine.

(*Continued from page* 819.)

YOU now see that though my museum comprises several specimens of malformed hearts, there is but one of these which gave rise to cyanosis during life, and that one has a contracted pulmonary orifice. In the museum of the Royal College of Surgeons, which I intend to visit after lecture with those of you who have leisure to accompany me, there are ten specimens of cardiac malformation, while in only two of these cases does the catalogue allude to the existence of cyanosis during life. In both these specimens the pulmonary orifice is stenosed. What, then, is the significance of this association of pulmonary stenosis with the development of cyanosis in patients whose hearts are otherwise malformed? The following experiment will probably suffice to explain the connexion.



I have here a little apparatus consisting of two indiarubber syringe balls, A and B, united on one side at C, and communicating internally with one another at the point of contact. Each ball is fitted with a small funnel and stop-cock, *d*, *d'*, to allow of its being filled with fluid, and each has also a rather wide nozzle or exit-pipe, *e*, *e'*, which is likewise fitted with a stop-cock. In these two bottles are two coloured fluids, the one red and the other blue. The specific gravity of both fluids is identical, and is very nearly the same as that of the blood, or about 1055. I now place the conjoined balls in this rack, and, opening the stop-cocks of the funnels, I rapidly fill both balls simultaneously perfectly full of the different coloured liquids. Let us suppose that A contains the red fluid and B the blue. I close the stop-cocks *d*, *d'*, open those of the nozzles *e*, *e'*, and quickly compress both balls at once between

these two pieces of board. You observe that the red and blue fluids have only mingled to a slight extent, and that the colour of each is nearly pure. I now refill the balls as before, but this time I open the stop-cock *e* widely, while allowing *e′* to remain more than half closed. On again compressing the balls, you see at once that the fluid runs purple. The obstacle at *e′* has caused an inequality of pressure on the liquids in the two balls; for recollect, both balls are under an equal amount of pressure, but the exit-pipe of A is free, while that of B is only half open. When both stop-cocks are open equally, the pressure of the fluid in A counterbalances the pressure of that in B, so that there is but little admixture; but when the stop-cock in the nozzle of B is wholly or partially closed, it is obvious that its contained fluid will be under increased pressure, and will naturally seek another mode of exit. This way of exit is afforded by the aperture of intercommunication, and thus the fluid in B is forced through this aperture into A, so that a large amount of admixture results.

Further, if we suppose the walls of the balls to be endowed with such properties as would presently tend to effect the obliteration of the aperture of intercommunication at C, it is obvious that the excessive quantities of fluid incessantly forced through this aperture in consequence of the semi-closure of the proper exit-pipe of B, would tend to militate against the closure of C, and to maintain it in a state of permanent patency.

Let us next apply the facts taught us by this simple experiment to the case of the heart itself. The two balls may be taken to represent the two auricles or the two ventricles, with an abnormal aperture of intercommunication in the interauricular or interventricular septum, as the case may be. For instance, the pressure exercised on the blood in the two auricles by their simultaneous systole is about equal, so that the patency of the foramen ovale will not imply any very large amount of admixture of arterial with venous blood so long as the normal passages of exit are perfectly free and open. Thus the blood in the right auricle will pass freely through the tricuspid valve into the right ventricle, and thence through the pulmonary orifice to the lungs; while the blood in the left ventricle will also pursue an uninterrupted course through the mitral valve into the left ventricle, and so onward through the aortic orifice into the systemic vessels. There will, of course, be a slight amount of admixture at the point of contact through the open foramen ovale; but this admixture will not be sufficient to give rise to the phenomena of cyanosis, for the venous blood circulating in the systemic arteries, and the arterial blood circulating in the pulmonary ones, will only amount to a small fractional part of the total quantity of blood in the systemic and pulmonary arteries respectively. There will be a certain inconsiderable waste of power, and that is all.

But now suppose the tricuspid or pulmonary orifices are stenosed.

What, then, will be the consequence? The blood will be, as it were dammed up behind the affected valve; the right auricle and ventricle in the case of stenosis of the pulmonary valve, or the right auricle alone in the case of lesion of the tricuspid, will be engorged with blood, which cannot escape fast enough through the closed floodgates which bar its way to the lungs; the pressure on the venous blood inside the over-distended cavities will be increased; that fluid will seek some other mode of exit, and, the foramen ovale being patent, a large quantity of non-aerated blood will pass into the left auricle, and thence into the left ventricle, aorta, and systemic arteries, and so a condition of extensive venosity of the arterial circulation will be established.

Further, in consequence of the block on the right side of the heart, the venous blood returning through the venæ cavæ will accumulate in these vessels, causing engorgement not only of the larger venous trunks, but also of the smaller systemic vessels which empty themselves into these main conduits. So, not only will venous blood circulate in the arteries, but this grave state of matters will be rendered still graver by the obstacle to the venous return; unaerated blood will stagnate in the systemic veins and capillaries; the way to the lungs being well-nigh closed, only a portion of the blood in need of aeration will reach them; even this portion will not be supplied to the tissues in a pure state through the systemic arteries; the main bulk of the blood in the patient's body will become deoxydized, and the issue will culminate in the production of cyanosis.

When the aorta arises from both ventricles, the conditions are somewhat similar; though, even apart from pulmonary stenosis, we should naturally suppose that the degree of admixture of blood would be greater.

Again, the general effects are very similar if the obstruction is situated in the lungs themselves. In some instances patients not usually cyanotic have become so on contracting an attack of bronchitis. In these persons some communication has probably always existed between the two opposite sides of the heart, though this has not of itself proved sufficient to give rise to cyanosis; but as soon as the pressure on the right side of the heart has been raised by the obstruction to the passage of blood through the lungs, the conditions of intermixture in the systemic arteries and engorgement of the systemic veins have sufficed to cause lividity of the cutaneous surface.

From the evidence of most authorities, as well as from the results of my own experience, stenosis of the pulmonary orifice, or congenital smallness of the pulmonary artery, appear to be the conditions most frequently associated with developmental cardiac malformations in the production of cyanosis. Congenital smallness of the pulmonary artery is itself an example of developmental failure; but stenosis of the pulmonary orifice appears in the majority of cases to be due not so much to malformation as to endocarditic or inflammatory changes. You will remember that during extra-uterine life, endocarditis affects principally the left side of the heart, and the probable reasons for this preference are to be sought in two facts: firstly, that during independent existence, the left cavities have a greater amount of work to perform and friction to undergo, since upon them devolves the task of propelling the blood through the greater or systemic portion of the circulation; and, secondly, that the left cavities then contain the arterial or oxygenated blood, which appears to be of a more stimulating nature than the venous. Now, if we refer to the arrangement of the fœtal circulation, we see that during intra-uterine life many of the conditions of the two sides of the heart are reversed; and, accordingly, endocarditis in the fœtus is more frequent on the right side, for the same reasons which determine its selection of the left side after the birth of the individual.

Endocarditis of the pulmonary valve produces the same effects in the direction of fibrous thickening, contraction, or adhesion of cusps either to one another or to the walls of the vessel, which are more familiar to us in the case of the aortic valve. These changes may entail either incompetence or stenosis; and though, so far as my experience extends, the condition has invariably been one of stenosis, yet I have no doubt that specimens of incompetence are occasionally met with. In both lesions alike, the effects as regards cyanosis would probably be identical in kind, though possibly more marked in degree in the case of stenosis.

In the experiment with the syringe balls I explained to you how permanent total or partial closure of the proper exit pipe of one of them would tend to perpetuate the aperture of intercommunication, supposing this aperture normally tended to close after a while. Applying this explanation to the case of the heart, you will be able to see how stenosis of a principal orifice, such as the pulmonary, may become a source of permanency of the ductus arteriosus and foramen ovale, or of imperfection in the septum ventriculorum. The blood from the fœtal right ventricle will be unable to reach the lungs through the pulmonary artery, and these organs will be supplied from the aorta through the ductus arteriosus and bronchial arteries. Thus after birth the ductus arteriosus will be prevented from closing, because upon it the lungs will be dependent for a large part of their blood supply. Again, the engorged state of the right side of the fœtal heart will keep the foramen ovale widely patent, and tend to prevent the proper development of the ventricular septum; the overloaded right side will discharge its pent up contents into the left side through these orifices, which will thus become enlarged and remain persistent after birth. In this way pulmonary stenosis may at times occupy not merely a concurrent, but a causatory relation to the malformations associated with it in the production of cyanosis. The same observations would equally apply were the stenosis situated on the left side of the heart.

Let us now devote a few moments to the mechanism of those rarer cases where the obstruction lies on the left side. Supposing, for instance, the foramen ovale is patent, and the aortic orifice stenosed. The blood-pressure in the left auricle and ventricle will be in excess of that in the cavities on the right; the arterial blood, which were the aortic valves normally pervious would find its way into that vessel, now passes through the open foramen ovale from the left auricle into the right, and from thence through the right ventricle and pulmonary artery to the lungs, thus excluding from these organs a portion of the venous blood from the venæ cavæ which requires re-aeration. Thus the pulmonary arteries are supplied with a quantity of arterial blood which stands in no need of aeration, and are prevented from receiving for aeration a large proportion of the venous blood which actually requires it. Further, from the block on the left side of the heart the lungs are actually passively engorged with arterial blood; and the pulmonary engorgement acting backwards through the right side of the heart, the venous blood accumulates in the venæ cavæ, and the systemic veins become engorged. Lastly, there is arterial anæmia in front of the occluded aortic orifice, and thus a condition of lividity of the cutaneous surface is produced. Possibly, as an attempt at partial remedy of this serious state of matters, the ductus arteriosus may remain open, when the aorta will be supplied with the mixed blood circulating in the pulmonary artery; but though this imperfect compensatory effort may indeed serve to augment the chances in favour of the maintenance, for a time, of a precarious existence, it will in no way obviate the cutaneous lividity. The conditions are much the same in those excessively uncommon cases, where the *isthmus aortæ* is the seat of the occlusion—though here, probably, the head, neck, and upper extremities may be a trifle better supplied with arterial blood. The supply of the lower extremities is provided for from the pulmonary artery through the patent ductus arteriosus.

Quite as rare are those strange cases to which I have before alluded, where the pulmonary artery and aorta are transposed with relation to their origin from the ventricles. The pulmonary and systemic circulations are entirely shut off from one another, the former containing arterial, the latter venous blood only. As in the two cases I have cited, life may be maintained for a few months or even years after birth if a large opening exists in the inter-auricular or inter-ventricular septa; but the subject must necessarily suffer from venosity of blood in an extreme degree, and could scarcely, one would think, under any circumstances survive beyond the period of later infancy. In my earlier professional career, before I relinquished general practice, I was called out one night to a midwifery case, and encountered an instance of lateral presentation. I delivered by turning, and brought into the world a very fairly nourished male child, which, however, evinced no disposition to breathe. On applying artificial respiration the hue of the cutaneous surface gradually became livid. Presently the child began to breathe naturally, but instead of vanishing, the cyanosis deepened, and it died in less than two hours after birth. No post-mortem was allowed, very much to my regret; for I have a shrewd suspicion that an autopsy would have revealed a condition of transposition of the principal arteries, or some other closely analogous malformation.

Permanent patency of the ductus arteriosus is sometimes met with alone, when it is supposed to be due to some previous obstruction in the pulmonary circulation. More commonly, perhaps, it occurs in combination with other conditions. If the pulmonary orifice is stenosed, the fœtal lungs are supplied with blood from the aorta through this channel as well as through the enlarged bronchial arteries. If the stenosis affects the aortic opening or the *isthmus aortæ*, the whole systemic circulation in the first case, and that of the lower extremities in the second, is supplied by this channel with blood from the pulmonary artery. Not unfrequently it is coexistent with openings in the septa between the right and left sides of the heart. Permanent ductus arteriosus with extreme aortic or pulmonary stenosis might probably be sufficient in itself to give rise to cyanosis; but, so far as my own observations extend, I have hitherto always seen it either in combination with some third lesion, such as patent foramen ovale, or else altogether alone and apart from any connexion with cyanosis, in which case its lumen was invariably small.

The mechanical conditions in those cases where the right or left ventricle is congenitally small and undeveloped are very similar to those of aortic or pulmonary stenosis. The undeveloped ventricle is connected with an undeveloped vessel, so that the obstructive conditions are practically identical.

As a general rule, cyanotic lividity is congenital. But, as we mentioned when speaking of the development of cyanosis during attacks of bronchitis, it occasionally manifests itself for the first time at a later period of life in consequence of some incidental obstructive condition of the lungs, cardiac valves, or great vessels being superadded to congenital cardiac deficiencies. Thus an individual with a patent foramen ovale may possess a complexion of normal hue until he suffers from an attack of rheumatic fever with endocarditis; he may then become cyanotic, and remain so for the rest of his life. The endocarditis has affected one of the valves of the heart, probably on the left side; the valvular lesion has led to engorgement of the lungs, increased pressure on the blood in the left auricle, and consequent free admixture of arterial with venous blood through the open foramen ovale, as well as to arterial anæmia in front of the affected valve. Thus pulmonary and venous congestion are superadded to the original malformation; the admixture of arterial with venous blood is greatly increased; and so a cyanotic appearance begins to manifest itself, which is further intensified by the pallor of arterial anæmia. Obstructions in the lungs from pulmonary disease, and in the large arteries from such causes as atheroma and aneurism, may in like manner act as determining causes.

We are now in a position to group the causes of cyanosis under the two broad heads of Predisposing and Determining:—

As Predisposing causes we may enumerate the various cardiac malformations already described; and as Exciting or Determining causes, all obstructive conditions situated in the cardiac valves, the pulmonary artery, the lungs themselves, and the great arterial and venous trunks. Granted a fairly marked congenital cardiac malformation, plus a condition of obstructed circulation, and you have the essential elements for the production of cyanosis.

The question has often been mooted whether the lividity of the skin is due to the admixture of blood or to the circulatory obstruction. From what I have previously said, you will probably gather that the true solution is to be sought in the mean between these two extremes. There are cases on record where, from the very nature of the malformation, there must have been thorough admixture of arterial and venous blood, and yet, in spite of all this, the hue of the skin has remained normal. For example, thorough admixture must take place in a univentricular heart, with no tricuspid valve and an unclosed foramen ovale. Yet, I have read of at least one such case where cyanosis was conspicuous in its absence. On the contrary, cutaneous lividity is seldom so marked and permanent as to constitute actual morbus cæruleus, unless there be some congenital deficiency in the heart itself. Accordingly it appears reasonable to assign to both conditions a joint share in its production.

With regard to the symptoms of cyanosis, the first and chief, but by no means the only one, is of course the discoloration of the skin. The temperature of cyanotic patients is low; in extreme cases the thermometer placed in the mouth may not register more than 77° Fahr. They exhibit extreme sensibility to external cold, and require a warm atmosphere and plenty of clothing. They are subject to bronchitis, palpitation, dyspnœa, and syncope from slight causes of excitement. The tips of the fingers and toes generally become clubbed, and the nails are convex and incurved. Malformation and imperfect development of the generative organs is not uncommon. The cutaneous lividity deepens on the occurrence of anything which disturbs or excites the circulation, such as crying, coughing, mental and physical excitement, and other like causes. The heart sounds are normal, except in those cases where there is valvular disease. The intellectual faculties are dull; the physical development is stunted, and the general disposition is sluggish and torpid. Cyanotic children rarely live long; but exceptionally they may reach puberty, or even adult life. A fatal termination is usually announced by the occurrence of bronchitis, bronchorrhœa, hæmoptysis, pulmonary congestion, nervous disturbances, and dropsical effusions into the serous cavities. Death is seldom sudden, and usually supervenes as a gradual consequence of one or more of these causes.

Rokitansky considers that cyanotic patients possess a perfect immunity from tuberculosis; but a case of Dr Peacock's, described in the Pathological Society's Reports for 1848, in which cyanosis and tuberculosis of the lungs were coexistent, affords conclusive proof that this dearly-purchased immunity is by no means absolute. From some unexplained cause cyanosis is more frequent in males than in females.

Such, Gentlemen, are the principal features of this interesting condition. In all its forms it is somewhat rare, and possibly, on this account, some of you may be disposed to regard it as of minor importance to the physician—that is to say, if any one of the many ills which flesh is heir to can with propriety be relegated to the background by those whose special duty and privilege it is to investigate and to combat them. But, on the other hand, it possesses a special interest to the pathologist, from the fact of its connexion with a most remarkable series of developmental failures affecting the central organ of circulation. These spoiled samples, as we may call them, from the cardiac department of Nature's laboratory afford important information as to the manner in which she works in the production of perfect ones; they serve to elucidate the several steps in the complex process by which a highly differentiated organ like the mammalian heart is built up, first from a mass of cells, and afterwards from a straight tube with simple dilatations. They show us how developmental arrests at different periods of fœtal growth produce different effects in the direction of permanent malformation; and they enable us rightly to estimate the wonderful nature of those physical adaptations in the embryo upon which the future perfection of the separate individual is dependent.

Do not suppose that this knowledge is unimportant because it possesses to-day what it is the fashion to call a "merely scientific interest." To-morrow, perhaps, it may become of practical importance by enabling us to counteract those unfavourable conditions to which these cardiac malformations owe their origin. You may perhaps be inclined to think this surmise Utopian, but science has already accomplished things as wonderful. Who in past ages would have dreamt that the power concerned in so apparently insignificant an incident as the attraction of small pieces of paper by a glass rod or a stick of sealing-wax rubbed with a silk handkerchief would one day enable us to annihilate distance, to outspeed Puck, and to put a girdle round the earth in far less than forty minutes? Before the days of Jenner, who would have imagined that a slight cutaneous affection of the udders of cows was destined to be the instrument in the hands of science in stamping out one of the most hideous scourges that ever afflicted mankind? Do not, therefore, disregard theoretical knowledge because it appears at the instant to have few practical applications. The whole history of mankind is but one long sermon on the poet's text,—

> "What great events from trivial causes spring."

ARTICLE IV.—*Some Account of a very Severe Case of Membranous Dysmenorrhœa treated by Rest, Chapman's Spinal Hot Bag, and Donovan's Solution.* By JOHN E. RANKING, M.D., M.A., Physician to the Tunbridge Wells Infirmary.

(*Read before the Edinburgh Obstetrical Society 12th January* 1881.)

T. S. R., a lady, unmarried, æt. 38.

History.—Catamenia began at twelve years of age, always irregular and profuse, lasting ten to fourteen days, but painless until age of 21. After prolonged exposure to cold on second day of period the flow stopped, and on its next return there was great pain, which has been the case more or less ever since. In the spring of the following year suffered from dragging pain in back and leucorrhœa almost continuously, debility, frequent headaches, and increased dysmenorrhœa. Six years later had measles severely, followed by vaginitis and expulsion of membranous casts both from vagina and rectum, repeated at intervals of about ten days for six months, when it was replaced by a thick, purulent, offensive discharge. There was great debility, with frequent sickness and loss of flesh. In the following spring (1868) an examination was made, discovering extensive ulceration, which had destroyed part of the cervix, and caused irregular cicatricial contraction of the vagina, also retroversion. In 1870 membranous dysmenorrhœa was detected. Treatment by tents and intra-uterine applications of iodine gave some relief, but after a short time was abandoned. During the following six years was treated as opportunity offered, became steadily worse, and had floodings and swelling of left thigh. In 1877 she came under my notice, complaining of pain in back, gnawing supra-pubic pain, especially before expulsion of membrane. Bowels and bladder very irritable. Frequent severe hemicrania. Total inability to retain anything on the stomach at the time of the period, which returned every five weeks. There was also evidence of chronic septicæmia. Had lately suffered during and after each period from severe convulsive movements of both legs. At this time the following condition locally was noted:—

Vagina.—Orifice small. Hymen absent. Mucous membrane totally destroyed throughout, the whole passage resembling a well-marked vaccination cicatrix with frequent puckerings. At the roof is a very dense annular cicatricial band with a hard, sharp edge, and barely admitting the point of the forefinger. The roof is "flush," the position of the cervix being recognised only by a dimple, which through the speculum shows a small protrusion of florid mucous membrane. The sound passed, after considerable curving, with difficulty directly backwards. The fundus is in Douglas's pouch, enlarged and immovable. During the summer membrane began to be discharged during the menstrual interval as well as at the period. In spite of the increased frequency of expulsion of membrane, the quantity and thickness of that expelled during menstruation was not diminished. In consequence of the repeated removal of membrane, the distress usually observed only during the period recurred once, or even twice, during the interval, and the constant vomiting and pain caused great malnutrition. The pelvic congestion increased; both ovarian regions became prominent and very tender; the left leg swollen and very painful, with great prominence and tenderness over the femoral vein. The vaginal walls were so œdematous that the tube of a Higginson's syringe could not be introduced. Menstrual hæmorrhage almost *nil.* During the early part of August the symptoms were in some measure relieved by leeching round the vaginal orifice, but no local treatment was possible. On 21st August 1877 the following treatment was adopted:—1. Spinal hot bag to dorsi-lumbar spine for two hours thrice daily; 2. Donovan's solution, ten minims thrice daily; 3. Generous diet, with stimulants; 4. Rest in bed upon an inclined plane, sloping down from the feet. This last had been tried off and on for two years. The thermometer showed a nightly rise, and there were occasional night sweats.

This treatment was continued without interruption (except that the bag was not used during the menstrual flow) until November 17th, when Donovan's solution was stopped, as it was thought to aggravate the hemicrania and other neuralgic symptoms. During this time the effects of treatment were most gratifying. *The dysmenorrhœal membrane was greatly reduced both in quantity and consistence.* The membrane passed during the period immediately preceding treatment was dense, leathery, and of the thickness of very stout mill-board. Microscopically it showed the usual appearances, but with a dense fibrinous basis. It became less dense, more cellular and bloody, until in November it was transparent, almost bloodless, and so thin and broken that only one piece could be saved about the size of a shilling. A series of specimens taken from each period during treatment are in my possession. *The pelvic congestion was lessened,* as shown by—

1. Diminished pain and swelling of the thigh, and sinking of femoral vein.
2. Marked diminution of swelling of vaginal walls. This was one of the earliest effects. Whereas, before treatment, the tube of a Higginson could not be passed, during treatment there was never any difficulty after the first few days.
3. Partial return of swelling in leg and abdomen when the bag was used less steadily.
4. Diminished ovarian disturbance and swelling.

Remarks.—The interest of this case turns upon its very unusual severity, the complicated nature of its causation, and, as far as I am aware, novel method of treatment. The patient was without doubt a virgin, and any syphilitic taint was out of the question.

It may be thought that much of the benefit is to be traced to the prolonged rest and postural treatment, but this cannot, I think, be upheld in the face of the fact that both these means had been tried steadily for even longer periods without any such good effect. Moreover, benefit sometimes accrues from a similar use of heat to the spine in cases where, during the climacteric, periodical congestions occur in the pelvic organs, whilst the menstrual flow is arrested or uncertain. That the alteration in the membrane was at least in great measure due to the Donovan's solution can scarcely be questioned.

The lady was unhappily again exposed to a severe chill during February 1878, and became nearly, if not quite, as bad as before, being unable to take treatment. In conclusion, it may be stated that this patient is quite intolerant of iodine in any other form.

ARTICLE V.—*Observations on Ear Disease.* By P. M'BRIDE, M.B., F.R.C.P.E.

1. *Treatment of Aural Polypi by Rectified Spirits.*

IN the early part of last year I found that Dr Miller[1] of Edinburgh had successfully treated nasal polypi by a spray of rectified spirits. Now, alcohol has for some time past been used as a remedy for chronic suppurative otitis media with considerable success and with perfect safety. In the *Lancet* of 1874 Dr Cassels[2] pointed out that the cases of otorrhœa which are most suitable for this treatment are those in which the mucous membrane of the tympanum is red and granular—in fact, in a condition of polypous hypertrophy. It seemed, therefore, to be a justifiable experiment to test its effects on true polypi. Of course, where at all practicable, it is always advisable to remove the growth as soon as possible; but after this has been done, it has been the practice to cauterize the pedicle at short intervals to prevent recurrence. Then, again, one not unfrequently meets with cases where, from extreme youth, nervousness on the part of the patient, or from the position and shape of the polypus, it is difficult to effect its removal.

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[1] *British Medical Journal*, 13th December 1879.

[2] *Lancet*, 1874, vol. i. p. 584.

Now, it was evident that if rectified spirit proved as effectual in the treatment of aural as in nasal polypi it supplied two desiderata. In the first place, after the removal of a polypus, it would prevent its recurrence; and being a remedy which the patient can apply at home, it would do away with the necessity for the constant visits to the surgeon which cauterization of the pedicle necessitated. In the second place, it would afford a means of treating those cases where, for some of the aforesaid reasons, it is difficult to operate without a certain amount of risk.

In preventing the recurrence of polypi after removal, I have found it tolerably successful in those cases where the treatment was carried out carefully by the patient. In two cases (dispensary patients) where it seemed to have failed, there was every reason to suspect that neither the cleansing of the ear several times a day nor the application of the spirit was carried out, as in both cases, when the patients returned with fresh polypi, the ears were full of fœtid discharge, and had a generally dirty appearance.

In one case an opportunity was afforded of watching the effect of spirituous instillations on a polypus of large size. It occurred in the ear of a young woman who would not consent to have it removed. The growth was so large as to fill the whole bony meatus. Instillations of rectified spirit thrice daily, to be diluted with water at first, but gradually to be strengthened till the pure spirit was used, were ordered. The result was that in a few weeks the growth was half its original size, and in about a fortnight more it was so small that it was altogether behind the tympanic membrane. It could, however, be seen, and felt with a probe, through a perforation of about the size of a pea. After this it seemed to decrease more slowly. At the patient's last visit it was still present, although the otorrhœa was very slight, and the hearing had improved. This case proved the fact that alcohol has a very decided influence on aural polypi. Granulations in the meatus and on the tympanic membrane it also acts upon, but these not unfrequently disappear under the application of sulphate of zinc and carbolic acid (grains 5 of each to ℥j. of water). The mode of using the instillations is similar to that of applying ear-drops generally, but it is well to dilute the spirit for the first few applications. Very excessive pain has not been complained of by those to whom I have prescribed it.

As regards the action of alcohol on the polypus, it is probably a double one. These growths are very œdematous, and consequently a large proportion of their bulk consists of water. Alcohol has the property of abstracting this, and thus probably tends to diminish the size of the morbid growths. It also has the property of coagulating albumen, and it seems quite possible that it may thus act in some way as a check upon cell growth, but of this action it is difficult to speak with certainty.[1]

In two cases, after long-continued use of rectified spirit ear-drops, circumscribed inflammation of the meatus set in. Of course this may have been due to other causes, but still I felt rather inclined to ascribe the result to the alcohol. It seems quite possible that the latter, by virtue of its property of coagulating albumenoids, may produce obstruction of gland ducts, and so cause circumscribed areas of inflammation. We know that strong solutions of alum applied to the ear are apt to set up furuncles in the meatus.[2]

Last July, Professor Politzer[3] of Vienna published a paper on the use of alcohol in the treatment of aural polypi; but as I had begun to use it before that date, and as Dr Politzer's communication was the first that has appeared on the subject, I have thought it well to give my experience, which agrees in many points with his, and also how I was led to adopt this plan of treatment through Dr Miller's communication.

The morbid anatomy of true mucous polypi is the same in all parts of the body. Round cells, which sometimes lengthen out into fibres, and occasionally degenerate into myxomatous tissue, constitute the growth. Not unfrequently we see all three modifications in sections of the same growth, with transition shapes between round and spindle.

The instillations should be made two or three times a day, after the ear has been carefully cleansed by means of a syringe, or better still, by instillation of a solution of bicarbonate of soda,[4] followed by syringing, and then dried by means of a long thin plug of cotton wool or lint. The spirit may be diluted for the first one or two applications, but gradually strengthened till it is used pure.

2. *Anomalies of Taste in Ear Disease.*

Dr Urbantschitsch[5] found that suppuration of the tympanum is not unfrequently accompanied by anomalies of taste. As the latter were not confined to the anterior portion of the tongue, he concluded that anomalies of taste in ear disease may be produced by either lesions of the chorda tympani or reflex action through the glosso-pharyngeal nerve (tympanic plexus). He relates a very interesting case of perforation of the tympanic membrane, where, by touching with a probe a point corresponding to the posterior superior part of the membrane, he was able to produce a burning sensation and an acid taste in the tip of the tongue, while touching the inner wall of the tympanum produced a tickling in the posterior part of the pharynx. That the chorda tympani is connected with the sense of taste in the anterior part of the tongue is rendered probable by the observations of many aural surgeons and physiologists. In addition to the evidence afforded by Urbantschitsch, we have, favouring this view, observations by Moos, Toynbee, Hinton, and others among aural surgeons.

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[1] Some polypi have a very decided analogy to round-cell sarcoma in their histological characters. It would be interesting to know whether alcohol injected into the latter would act in any way as a check to further growth.

[2] *Lehrbuch der Ohrenheilkunde*, von Troeltsch, p. 99.

[3] *London Med. Record*, 15th June 1881; *Wiener Medzin. Wochenschrift*, 31st July 1881.

[4] Bicarbonate of soda solution, by loosening and softening crusts of hardened pus, etc., when followed by syringing, is a most useful instillation in all cases of chronic suppuration of the middle ear before curative remedies are employed, as it enables them to come in contact directly with the diseased surface.

[5] *Lehrbuch*, p. 413.

Moos[1] noticed the production of anomalies of taste and sensation in the anterior part of the tongue while applying an artificial tympanic membrane in cases of perforated drumhead.

Toynbee,[2] in his work on *Diseases of the Ear*, in describing the clinical history of a case of ruptured membrane (traumatic), says, "For days after the laceration of the membrane in the above case there was a feeling on the same side of the tongue as if something cold had been rubbed over it; the taste on that side was also impaired. The tongue, however, was quite natural in appearance and movements, and its sensibility to touch was the same on both sides."

According to Wilde,[3] "When the membrane is perforated, and we touch it or a polypous growth, or sometimes even an abraded spot in the meatus, with solid nitrate of silver, it is in many cases tasted in the mouth almost immediately, but only on the side to which it has been applied. Patients say that they feel the impression of the caustic running down along that side of the tongue, but not reaching the lips. I never knew this peculiarity except when there was a hole in the membrane. Is it transmitted by continuity of mucous surface, or by means of the chorda tympani?"

Hinton[4] writes, "In respect to the functions of the chorda tympani, in one case in which I accidentally divided it in making incision of the membrane there appeared to be a good deal more than the usual amount of pain, which lasted for three or four days, and taste was much diminished along the whole of the corresponding side of the tongue; it was regained in the course of a fortnight."

More recently Moos[5] has described a case where abnormal sensations occurred in the anterior two-thirds of the tongue after the removal of a polypus from the right tympanum. These were ascribed to injury inflicted on the chorda tympani during the operation. A feeling as if the tongue were covered with hair was complained of, and the sense of taste in the corresponding area was

[1] *Centralblatt f. d. Med. Wissen.*, 1867, No. 46; and *Archiv f. Augen. Ohrenheilkunde*, i., 1869, quoted by V. Vintschgau.

[2] 1860, p. 185.

[3] *Aural Surgery*, p. 305.

[4] *Quest. of Aural Surgery*, p. 21.

[5] *Zeitschrift für Ohrenheilkunde*, viii., 3d August 1879.

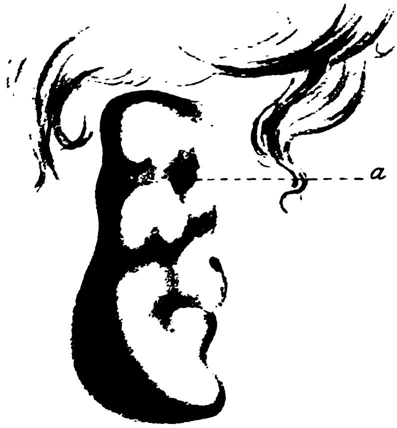

Fig. I.

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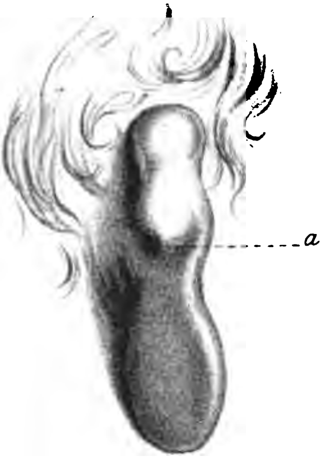

Fig. II.

J. Bartholomew Lith.

subject. The patient had a large polypus with copious otorrhœa in the left ear. On the right side the greater part of the tympanic membrane had been destroyed, except its upper margin. Growing apparently from the anterior portion of this was a small polypus, which was removed with a Wilde's snare. On asking the patient whether he felt any pain, he said not, but that for a moment he had felt as if a wire had been put round the tip of his tongue. On the following day the sense of taste was tested with acid, sweet, salt, and bitter substances, and found deficient in the left anterior part of the tongue, and almost absent on the right side. The deficiency of taste in the left side was, no doubt, due to the chronic suppuration and polypus, for, as above stated, Urbantschitsch found that a large proportion of patients afflicted with tympanic disease suffer from a diminution of taste. The difference between the two sides, however, together with the subjective phenomena at the time of the operation, render it extremely probable that the chorda tympani was then injured. The patient experienced no further inconvenience. The polypus in the other ear was found difficult to snare, so a portion of it was removed with forceps, and rectified spirit instillations prescribed. I have not recently seen the patient, as he lives at a considerable distance, but understand that he is progressing to his own satisfaction, and hearing much better. No increased or diminished flow of saliva was complained of, but it is quite conceivable that some increase or diminution might have occurred without attracting attention.

There seems to be one other possible explanation of this case and some of those referred to by other observers. We know that the auditory meatus and tympanic membrane are supplied by branches from the inferior maxillary division of the fifth nerve, which also gives off the lingual. It seems quite possible that any shock communicated to one branch might influence another by reflex action, or perhaps we should say by transference of impulse, in the Casserian ganglion. A very powerful stimulus might first stimulate and then paralyze the ganglionic centre by exhaustion. At present, however, facts seems much more to favour the view, that the chorda tympani is the nerve affected in most cases where ear lesions produce anomalies of taste in the anterior part of the tongue. It is also extremely probable that in some cases, at all events, it contains fibres of common as well as special sensation.

3. *Case of Malformation of the External Ear.*

J. C. is a bright, intelligent, well-formed child of three years of age. He is described by his mother as being very "quick of hearing."

The right auricle presents the malformations from which the accompanying drawings were taken.

By a reference to Fig. 1, which represents a side view of the right auricle, it will be seen that the lobule is perfect and the antitragus nearly so. An elevation corresponding to the tragus is present, and the other ridges and depressions correspond more or less to the antihelix and helix with their fossæ and the concha. There is not a sign of a meatus, but in the upper part of the rudimentary auricle, in position corresponding with the fossa of the antihelix, is a well-marked depression, with a small fistulous opening in its floor (Fig. 1, *a*).

Fig. 2 represents the same auricle seen from behind, and near its junction with the scalp is a second opening, which, however, seemed to terminate in a blind sac when examined with a probe. Rather less than half of the appendage is taken up with the well-developed lobule, but the remainder is composed of cartilage and skin.

About two years ago the child was in considerable pain, which was relieved after a flow of pus from the opening represented in Fig. 2, *a*.[1]

Virchow[2] is inclined to look upon congenital malformation of the external ear as caused by arrested closure of the first cleft in the embryo (Kiemenspalte).

Heusinger was the first to describe a small fistulous canal, terminating blindly, which is found in some persons in the neighbourhood of, and generally rather above, the tragus, and ascribed it to the same cause. It is right, however, to state that Urbantschitsch[3] does not endorse this view. Clinical observers have found that these fistulæ congenitæ, as they are called, are generally mere blind sacs. They not unfrequently exude pus, but this only shows that they are liable to be attacked with inflammation like other canals, *e.g.*, the auditory meatus.

It seems extremely probable that the pain in the case we are considering, which was followed by a flow of pus from the fistulous canal, was of this nature.

In cases of malformation of the external ear with absence of the meatus it is now a well-established rule not to interfere, especially if the other ear be normal. Not unfrequently the defective development is not confined to the external ear, but involves the tympanum and labyrinth as well. However, when such a patient has arrived at the years of discretion, it is quite possible to make out the state of the deeper parts by attention to the following points:—

(1.) If a vibrating tuning-fork be applied to the forehead or teeth, and is heard distinctly by the malformed ear, we may assume that the sound-perceiving apparatus (internal ear) is present and in working order.

(2.) If air be blown through the Eustachian tube, and the normal feeling of distention be experienced by the patient, this fact would be strongly in favour of the presence of a tympanic membrane. Again, if during the process the end of an auscultating tube be placed on different parts of the auricle or its surroundings, and the sound of air impinging on the membrana tympani be heard more loudly at one particular spot, the fact would afford evidence of the locality in which an artificial meatus would most likely be of use.

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[1] The openings are stated by the mother to be congenital.

[2] *Virchow's Archiv*, Bd. 30, quoted by Schwartze.

[3] *Lehrbuch*, page 105.

It seems, however, better to abstain from operating where congenital bony closure of the meatus exists together with a malformed auricle.

ARTICLE VI.—*On a Form of Post-Partum Incontinence of Urine, and its Treatment by Faradaism.* By R. MILNE MURRAY, M.A., M.B., M.R.C.P.E.

(*Read before the Edinburgh Obstetrical Society, 9th February* 1881.)

THE reasons which have induced me to lay the following remarks before the Society are two:—*First,* that I may be enabled to make a contribution to the growing and ever-increasingly important subject of electro-therapeutics; and, *second,* that I may thereby have an opportunity of offering a suggestion as to the *rationale* and treatment of an untoward sequela of abnormal labour, namely, *incontinence of urine,* a condition causing misery to the patient only equalled in degree by the difficulty which its cure often presents to the obstetrician.

The time is not far distant when incontinence of urine occurring post-partum was regarded by the gynæcologist as almost beyond the reach of curative skill; and although the perfection of the operation for vesico-vaginal fistula has done much within recent years to increase the proportion of cures, yet cases are from time to time arising to which none of the ordinary modes of treatment are adapted, and which consequently give rise to a condition of prolonged misery to the patient. It is to the treatment of a certain variety of these cases that I would direct the attention of the Society to-night, and I trust a suggestion for the relief of such cases may be deemed a sufficient apology for so occupying your time.

In order that I may be able to indicate the precise nature of the cases suitable for treatment by galvanism, it may be well that I should glance for a moment at the general *causes* of incontinence of urine. These seem to me to be divisible into two classes:—

1*st,* Causes consisting in changes or conditions *outside* the bladder and urinary mechanism. These are chiefly mechanical in effect, and among them may be mentioned—*a,* forward displacement of the uterus, whether gravid or not; *b,* tumours of the pelvis pressing on the bladder and preventing its distention; *c,* inflammatory processes affecting the pelvic peritoneum or fascia, and causing contraction of the vesical surroundings. Such conditions as these affecting the bladder are remediable by other means if remediable at all, and are obviously not within the limits of galvanic treatment, and may consequently be left out of account at present.

2*d*, The second class of causes are those consisting in changes or conditions within the bladder or urinary mechanism, and may be divided into *four* groups — *a*, the presence of foreign bodies within the bladder, such as calculi, polypi, etc.; *b*, diseased conditions affecting the walls, such as cystitis, malignant disease, etc.; *c*, injuries causing structural changes in the bladder or urethra; *d*, changes in the nervous apparatus.

The conditions arising from the first and second of these groups (foreign bodies and diseased states) are likewise obviously not suited for galvanic treatment, and it is thus among the third and fourth groups that we must look for those varieties of incontinence which may offer favourable indications for the application of electro-therapeutics. To-night I wish to confine myself entirely to those cases arising from injury occurring during labour.

"That the danger of a labour to mother and child varies with its length," is a point on which all modern obstetricians are practically agreed. But while a certain amount of risk to the mother, at any rate, accompanies an undue prolongation of the first stage, it is certain that by far the greater proportion of the danger results from the retardation of the second stage. It is not necessary that I should now enter into any detailed account of the various sources of danger to which both mother and child are exposed by delay of labour at this stage; but there can be no doubt that one of the most frequent and most serious causes of mischief is that produced by the prolonged pressure of the fœtal head on the soft part of the pelvic canal. Why this risk is so serious in the second, while it is absent almost entirely in the first stage, admits of easy explanation. When, from some want of harmony between the three factors of labour, a delay occurs in the second stage, the presenting part, having lost the protecting function of the fluid wedge formed by the bag of membranes, is brought to bear *directly* on the soft parts forming the wall of one or other aspect of the parturient canal. If this pressure be unduly prolonged, or if it be not in proper time relieved by suitable interference, it may cause an amount of subsequent sloughing of tissue which, if it affect the anterior vaginal wall, may give rise to a complete perforation of it, opening into the urethra or bladder, and giving rise to urethro or vesico-vaginal fistula. This condition will, of course, cause incontinence of urine so soon as it is established, but happily in by far the greater proportion of cases a cure is obtained by the operation already referred to.

But, on the other hand, the slough which separates may not involve the whole thickness of the vesico-vaginal wall.

A considerable thickness of the vaginal aspect of the septum may separate, leaving a thinned wall and an ulcerated surface, which, when it heals, will do so by the development of a considerable amount of fibrous tissue. Supposing that the pressure during labour involved that part of the vesico-vaginal septum which corresponds to the sphincter vesicæ, the sloughing process may go deep enough to destroy a considerable amount of the muscular tissue forming the sphincter, leaving it thin and relaxed, and, of course, materially defective in contractile power. Moreover, it would be likely that the gradual contraction of the cicatricial fibrous tissue on the vaginal aspect might cause a further difficulty, and, by displacing the relations of parts, render the action of the sphincter still more ineffectual.

Such a condition, it will be seen, while not involving a destruction of tissue sufficient to constitute a true fistula, might, from the grave interference which it would cause with the function of the sphincter, result in a condition of incontinence no less inconvenient and distressing than that caused by the deeper lesion.

But there is yet another form of mischief which may follow such unduly prolonged pressure. It is quite easy to conceive that the sphincter, caught between the head and the pubes, might be subjected to an amount of violence from the grinding action of the head as to cause an immediate paralysis of the nerve terminations in it, so that its contractile power might be thus entirely destroyed at once. A condition like this would render itself evident soon after delivery, as incontinence would follow as an immediate result.

Such a state of matters is illustrated by the history and condition of a patient who applied for advice in July last to Dr Halliday Croom, through whose kindness I had an opportunity of examining and treating her as an out-patient at the Maternity Hospital in August last.

Mrs R., aged 37. Married for three years. Has had two children, the last in June 1879. Complains of complete inability to retain her urine, and of its constantly trickling away by day and night. This has continued since her last confinement fourteen months ago. Her first child was premature, born six months after her marriage. She states that she carried her second to full time, and went into labour on the morning of Thursday, 19th June 1879. She was seen by her medical man at intervals during the day, the pains being moderately strong and regular. The waters broke towards evening, and her doctor saw her then, examined her, and said all was going on well, and left her for the night. The pains continued strong and regular all night, but no progress seemed to be made, and the doctor was sent for on Friday morning. He came accompanied by another medical man, and they both examined her and told her she was doing quite well.

She was seen by one of them at intervals during the day. The pains, which had been severe and regular up till Friday forenoon, now became less so, and only appeared at long intervals during Friday night and Saturday morning. Notwithstanding this, and although the labour made no progress, no interference was attempted until Sunday forenoon, when instruments were applied by another friend of her doctor's, and delivery effected. The patient had thus been in labour for considerably upwards of seventy-two hours, and in the second stage for about sixty. She remained in bed for twelve days after delivery, during which period she noticed that the urine from the first day escaped from her constantly. It continued to do so night and day without change during the fourteen months which elapsed previous to her seeking Dr Croom's advice. Her bladder was invariably empty in the morning; and, as she expressed it, she had not slept in a dry bed since her confinement.

State on Examination.—There is a strong urinary odour about her person, and the external parts are red, swollen, and the thighs excoriated. The orifice of the urethra is pouting, red, and patent. The meatus shows a vertical slit in its upper edge about 1/16 of an inch in length. The canal admits a No. 10 male catheter without any resistance whatever, and the bladder is absolutely empty. Careful sounding of the bladder gives no indication of anything abnormal, and it is not hyperæsthetic. A little urine obtained by retaining the catheter in the bladder for a little is normal, and contains no albumen or pus cells.

Per Vaginam.—The vagina is roomy, and its posterior wall is smooth. On the anterior wall, 1½ inch from the ostium, is found a transverse depression or shallow groove, about 1 inch in length, and immediately behind it is a rounded eminence or ridge, about the thickness of the little finger, running across the wall and tapering away at both ends. The surface is smooth, and it is more resistent to pressure than the vaginal mucous folds. Firm pressure does not elicit any indication of pain in this or any other part of the vaginal wall. The most careful examination by the finger, and the repeated injection of milk into the bladder, failed to discover any fistulous opening. The uterus is normal in position, and if any prolapse of the bladder does exist, it is very trifling.

Such being the history and condition of this patient, it remains to determine, if possible, the immediate cause of the mischief. Here we have a case of complete incontinence lasting over a period of fourteen months, dating from her last confinement, not due to the mechanical pressure of any abnormal organ or structure within the pelvis, neither caused by any fistulous opening between the bladder and vagina nor by any inflammatory or other diseased condition of the vesical walls. Accordingly, the condition must be referred to the prolonged strain which the whole pelvic structure had undergone in her previous labour, the second stage lasting over three days. It would appear that the presenting parts must have exerted severe pressure on the anterior vaginal wall at a part corresponding to the vesical sphincter. This muscle had been completely paralyzed by the excessive compression which it had undergone, and had probably sloughed to a considerable extent afterwards. That a change of that nature had taken place is proved by the abnormal state of the anterior vaginal wall already described. The incompetence of the sphincter, caused at first by the crushing to which it had been subjected, would be further increased by the sloughing process; and the tendency to cicatricial contraction which would follow healing would in no way tend to improve matters. That the mischief was first due to paralysis from pressure seems plainly shown by the fact that the incontinence was observed on the day after delivery, before a slough could have formed, but there seems no doubt that it was further aggravated by the after changes I have referred to.

When considered in relation to treatment, a case such as this would seem more grave than complete perforation would have been, for then the ordinary operation might have offered the best hopes of success. Under the circumstances only two lines of treatment seemed to present themselves for consideration:—1. To divide the vaginal wall, either through the thickened mass or through the groove of cicatricial-like tissue in front of it, and so form a complete fistula, which in healing might set up such changes as would render the action of the weakened sphincter more effective; 2. To endeavour to restore the tone of the muscular fibre,—1st, by suitable medicines, and 2d, by galvanism locally applied.

As the first mode of treatment offered a barely hypothetical chance of success, and was too "heroic" to attempt except as a last resort, it was determined to give the latter a fair trial. Accordingly she was put upon full doses of ergot, phosphide of zinc, and strychnia, etc., for upwards of a month, without showing any indications of improvement whatever, and galvanic treatment was then adopted and applied in the following way:—A black rubber catheter, No. 7, through which passed a copper wire ending in a small brass knob, was introduced into the urethra up to the neck of the bladder, and connected to one terminal of a small Faradaic coil, while the other electrode, consisting of a broad copper plate, was applied over the sacrum. A current of extreme weakness, so as only to be felt by the patient, was transmitted in this way for ten minutes on August 18th, and repeated in the same manner on the three following days, the strength of the current being very gradually and slightly increased each day. On the following day, 21st August, the current was continued for fifteen minutes; and this time was increased by five minutes daily until thirty minutes were attained. The strength of the current was likewise gradually increased up to the point at which the patient could bear it. This treatment was continued in this manner from this time, for thirty minutes daily, up to the 30th October. The only variation adopted in the arrangement of the electrodes was in occasionally placing the flat metal plate on the abdomen just over the symphysis pubis.

The following notes record the progress of the case:—

Aug. 23.—After six applications. Patient states that on rising this morning she passed about half a teacupful of urine. This is the first time she has done so since her confinement in June 1879, her bladder having been invariably empty in the morning.

Aug. 26.—The amount of urine in her bladder was considerably greater. It came away in the same constant manner during the day.

Aug. 30.—States that she retained her urine all last night, the bed being quite dry, and during the last two days she has been able to retain her urine for nearly an hour at a time occasionally during the day. Any muscular exertion or coughing causes it to escape at once.

Sept. 3.—Retains the urine now the whole night, and for upwards of an hour during the day.

Sept. 30.—Has been gradually improving since last note. Can now retain urine for three or four hours, and that, too, under moderate exertion.

Oct. 15.—Except under violent exertion or coughing, the control over the bladder is complete.

Oct. 30.—Cure seems to be accomplished. *P. V.* (same day). The redness of external parts gone, and urinary odour not perceptible. Posterior vaginal wall normal. On the anterior wall the prominence previously described seems appreciably enlarged, and feels as if it projected more into the vagina. Parts otherwise normal.

I saw her again on Dec. 29, and she tells me that she is still quite well. Now and again a few drops escape in violent coughing or other exertion, but otherwise she has no trouble whatever.

Now, it appears that the history of recovery in this case fully bears out the idea that the mischief lay in a weakened sphincter, and that the recovery was due to an increased tone and probably growth of muscular tissue induced by the systematic application of the galvanic current. Such an increase of tone and growth is, I think, quite comparable to the similar changes which occur in a voluntary muscle of the limb during galvanic treatment after hemiplegia, etc. This explanation is further borne out by the fact that the recovery was gradual, being first observed in the recumbent position, when the least strain was brought to bear on the sphincter, and a considerable time elapsing before the sphincter was able to resist the sudden pressure put upon it by a cough. Further, the absolutely stationary condition which the patient exhibited for more than a year, and the rapid improvement which followed after she came under treatment, offer a strong presumption that the change was due to the galvanism, and that it was not a mere coincidence of a natural process with an artificial interference.

Before concluding this paper I may be permitted to offer one or two hints as to the mode of conducting the application of galvanism to the bladder. The instructions given in books are not sufficiently explicit as to some precautions, and my experience in the treatment of several cases last winter in the wards of the Royal Infirmary, under the charge of Professors Sanders, Grainger Stewart, and Annandale, and in the private practice of Dr Croom, may enable me to offer some suggestions for the benefit of any one who may think of applying it.

In the first place, the current to be employed must be of the very gentlest at first, and the increase must be slow and gradual. The bladder is often morbidly sensitive, and anything like a violent current or shock may produce very acute cystitis. In my experience it has done so on one occasion, when, through a fault in the battery, the zinc plate suddenly slipped entirely into the fluid.

In order to avoid any risk at first, it is a safe plan for the operator to pass the current through his body, which can be done by seizing one handle with the left hand and passing the moistened right hand over the back and abdomen of the patient, the other terminal being in the bladder. By pressing the hand firmly or lightly the current can be increased or diminished, and its strength is accurately estimated by the operator, while the patient is gradually accustomed to an increased power of the current. The current should be applied for ten minutes at first, and this gradually increased as the patient can bear it. It is well to have a little urine in the bladder: it serves to diffuse the stimulus, and is more agreeable to the patient than when the bladder is empty. And a final precaution must not be forgot, and that is, to stop the current before withdrawing the bougie, otherwise the most acute pain will be induced in the course of the urethra, which often remains for a considerable time.

ARTICLE VII.—*On the Anatomical Relations of the Trachea in the Child.* By J. SYMINGTON, M.B., F.R.C.S.E., Lecturer on Anatomy, School of Medicine, Edinburgh.

(*Read before the Medico-Chirurgical Society of Edinburgh, 2d February* 1881.)

THE subject of this communication certainly suggests a rather barren field for original research; but I trust that the great practical importance of an accurate knowledge of the relations of the trachea is a sufficient justification for my occupying a short time of this Society with its consideration, even though the new facts be scanty, and most of my results merely confirm those of other workers in this department. The value of the study of frozen sections to one desiring to gain an accurate idea of the relative position of parts is now well established. This method is especially valuable in ascertaining the alterations produced in the relation of parts by change of posture, and it occurred to me that a vertical mesial section of a child with the head thrown well back, as in the operation of tracheotomy, might yield some interesting results.

A female subject, 2 years and a few weeks old, was accordingly laid upon its back, with its shoulders raised and its head extended. It was frozen in that position by means of a mixture of snow and salt. A vertical mesial section was then made of the entire body. After washing away the sawdust from the cut surface, a careful tracing was taken on glass, and the body was kept frozen for three or four days, until it had all been carefully examined. I have now to submit to you the relations of the trachea as shown in the section.[1] [See Plate—a drawing (life size) of the left half of the vertical mesial section, made from a tracing taken while in the frozen condition. The odontoid process had not united with the body of the axis. The trachea and a part of the left bronchus are shown. The rings of the trachea have been made a little too broad.]

Commencement of Trachea.—In this case it was found to begin at the lower border of the body of the fourth cervical vertebra. In the adult, with the head erect, the trachea is stated by Braune to commence at the lower border of the body of the sixth cervical. It is said in many English text-books to begin at the fifth cervical. In a frozen adult male subject I found it to agree with Braune's description. The high point at which it begins in this section is due partly to the relatively small size of the larynx in the child, but also to the dorsi-flexed position of the head. I have not been able to find any plates of frozen mesial sections of children about this age in either Pirogoff, Braune, Legendre, Rüdinger, or Brushka. The sections of new-born children given by Rüdinger[2] and Ribemont[3] represent it as commencing about the middle of the fourth cervical.

Termination.—By a careful examination of the two halves of the section I satisfied myself that it bifurcated opposite the lower border of the first dorsal, which is just above the level of the manubrium sterni. In the adult the bifurcation is generally opposite the fourth dorsal (Luschka, Braune, Rüdinger). It is given as low as the fifth by Henle. In one of Pirogoff's plates,[4] in which the section was made with the head thrown back, it is opposite the third dorsal. In consequence of the absence of any exact information as to the normal position of the trachea in rela-

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[1] The left half of the section, with tracings taken in the frozen condition, were shown to the Society.

[2] *Topographisch-chirurgische Anatomie des Menschen*, von Dr Rüdinger, tafel xi.

[3] *Recherches sur l'anatomie topographique du fœtus*, par Alban Ribemont, plate vii.

[4] *Anatomie topographica*, 1859, fasc. 1 A., tab. 14.

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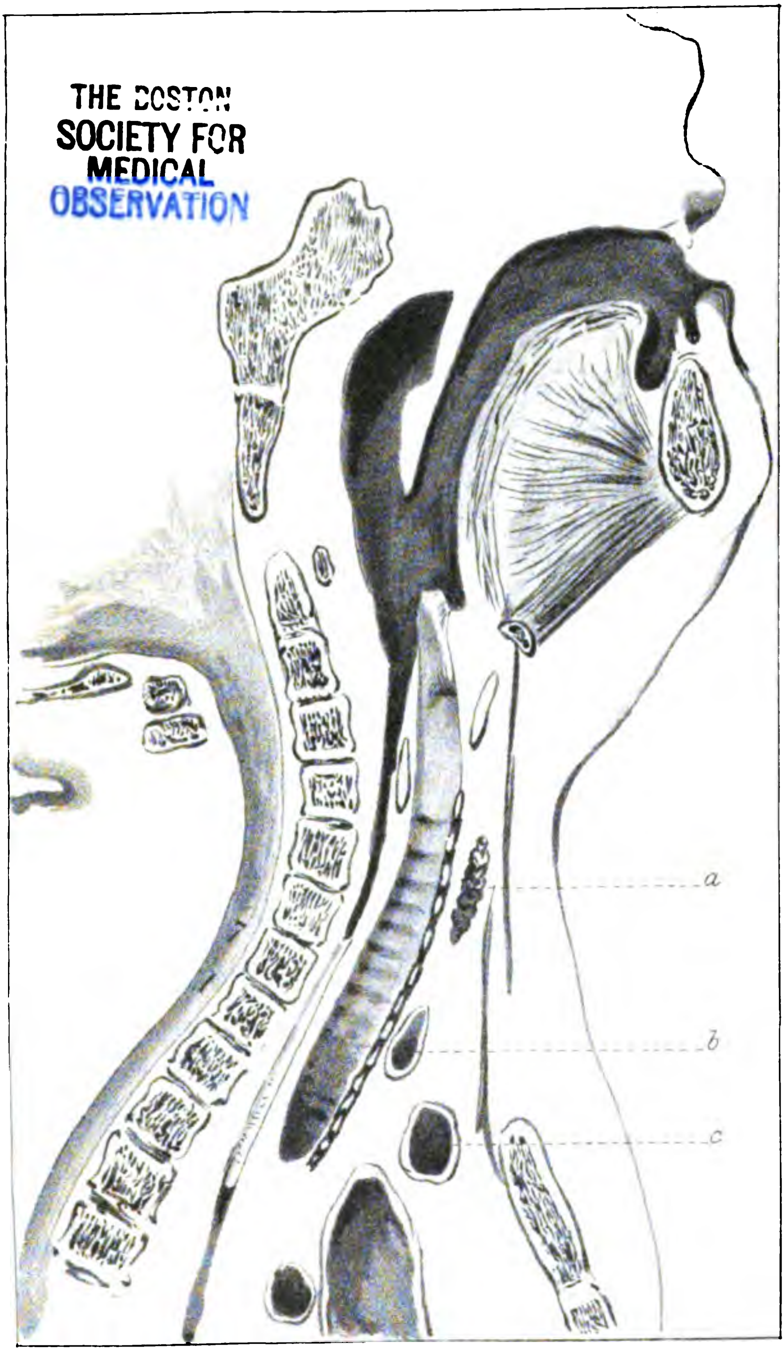

tion to the vertebræ in children at different ages, the displacement produced by this position cannot be defined, but it may be fairly assumed that the trachea is not merely lengthened, but its point of bifurcation is raised one or two vertebræ.

Behind.—There is nothing special to note. The œsophagus is a closed tube, compressed from the front backwards, so that the trachea lies very near the bodies of the vertebræ.

In Front.—These relations are of more practical importance to the surgeon. The increasing distance from the surface of the trachea as it passes down is well shown in this section, in which it is half an inch from the surface, just below the cricoid cartilage, one inch above the point where it is crossed by the innominate artery, and one and a half inches at the level of the upper border of the manubrium sterni. The isthmus of the thyroid body (Plate, *a*) extends from the cricoid cartilage downwards for about half an inch, lying in front of the five upper rings of the trachea. The thymus gland, mixed with fat, extends from the lower border of the thyroid body downwards on to the pericardium.

Two large vessels—the innominate artery (Plate, *b*) and left innominate vein (Plate, *c*)—also lie in front of the trachea. The innominate artery has been cut obliquely, as it lies in close contact with the anterior surface of the trachea. The distance between it and the lower border of the isthmus of the thyroid is only half an inch. The left innominate vein lies close behind the manubrium sterni, but nearly half of the cut surface lies above the level of the upper edge of that bone.

Considerable difference of opinion exists, even in this school, with reference to the relative advantages of performing tracheotomy above or below the isthmus. Professor Spence (*Lectures on Surgery*) prefers to operate, in cases of croup in children, below the isthmus, while Mr J. Chiene, in his *Lectures on Surgical Anatomy*, gives a list of reasons for preferring the high operation. Mr Joseph Bell (*Manual of Surgical Operations*) says that "the balance of authority tends to support the operation below the isthmus," and he considers it, "though more difficult in its performance, a much more scientific and satisfactory operation."

In this case an operation above the isthmus could only have been performed by first pulling it down. The isthmus of the thyroid varies considerably in size, but is generally relatively larger in children; and I believe that the condition shown in this section represents a frequent arrangement, viz., its extending as high as the cricoid cartilage.

In plate 1 (*a*) of Braune's *Atlas of Topographical Anatomy*, representing a vertical mesial section in a male subject aged 21, only one ring of the trachea is uncovered, and in plate 11, of a female aged 25, it reaches up to the cricoid cartilage. In a nine months' fœtus figured in Rüdinger it reaches from the cricoid cartilage nearly to the sternum.

The short distance in this preparation—only half an inch—between the lower border of the isthmus and the innominate artery certainly suggests caution in the performance of the low operation. The liability of the vessel being found in front of the cervical portion of the trachea is alluded to by many writers; thus Bellamy has the following footnote in his translation of Braune's *Topographical Anatomy*:—"In a case in which I performed tracheotomy on a man aged 60, I found the innominate artery running obliquely across the trachea below the isthmus."

In my dissecting-room I am in the habit of having the middle line of the neck dissected before the anterior triangles, and when the head is bent back the artery is frequently seen at the lower part of the space. The greater part of the origin of the vessel often lies to the left of the mesial plane; and although, in the erect position of the head, it may get to the right side of the trachea before it reaches the neck, yet when the head is thrown back, not merely is the trachea drawn up, but also the aortic arch and the other great vessels, so that the innominate artery may then lie in front of the cervical portion of the trachea. In this section the upper edge of the arch of the aorta is less than half an inch from the level of the upper border of the manubrium sterni.

The left innominate vein in one of Braune's sections, and also in a section of a female in Rüdinger, projects slightly above the level of the manubrium sterni, and in both of these sections the head is erect. There are no data at present from which we can estimate the degree of frequency with which these vessels lie in front of the cervical portion of the trachea.

These large vessels may be safe enough in the hands of a good anatomist and experienced surgeon, but the operation of tracheotomy is one that practitioners but little accustomed to surgical operations, and often with hazy ideas on anatomy, are liable to be called upon to perform, not unfrequently with a bad light and unskilled assistance. In such cases, in my opinion, they would do well to keep above the isthmus.

Pirogoff and Braune recommend that in ligature of the innominate artery the vessel should be sought for in the middle of the neck, and in some cases, such as in this section, it would be most easily found there, provided that the head was extended. In ligaturing this vessel, an incision might first be made in the middle line, and the vessel looked for just above the sternum. If the vessel could not be conveniently reached in this way, another incision could be made at right angles outwards over the clavicle, the sternal head of the sterno-cleido-mastoid divided, and the vessel exposed more externally.

In searching for foreign bodies lodged in the trachea or bronchi, the high point of bifurcation of the trachea in the position shown in this specimen should be remembered.

Part Second.

REVIEWS.

The Structural Anatomy of the Female Pelvic Floor. By DAVID BERRY HART, M.D., F.R.C.P.E., Assistant to the Professor of Midwifery in the University of Edinburgh. Edinburgh: Maclachlan & Stewart: 1880.

THIS work is the thesis of the author, for which he received a gold medal and the Syme Fellowship, on the occasion of his graduation in medicine at the University of Edinburgh. It consists of a series of investigations into the anatomical and pathological relations of the female pelvic floor, founded principally upon observations made upon carefully prepared mesial and transverse sections of the female pelvis and its contents. The author thus, as he moves onwards with his deductions, endeavours at every step he takes to support himself by exact anatomical evidence. This method has the additional security for accuracy that, according to it, the parts are seen and examined in their undisturbed natural relations. Dr Hart has here the merit of initiating in this country a plan of examination that will doubtless be advantageously followed in other investigations on the pelvic viscera, both pathological and anatomical. The great value of frozen sections of the various parts of the body has already been abundantly demonstrated by Braune and others, but has been little attended to in this country.

The work is profusely illustrated with engravings on wood and lithographic plates. These illustrations are in great measure original, being made from the author's own preparations and diagrams; but a considerable number of them are collected from other well-known sources, such as Braune, Thomas, Pirogoff, Legendre. The illustrations are very well executed, though some of them appear rather out of drawing—for example, Figures 12, 18, and 19.

With the general drift of the work our readers are already acquainted, as nearly the whole of the matter contained in the book has already appeared from time to time in the pages of this Journal. They will, we feel assured, none the less welcome the appearance of the papers in their collected form, enriched as they are now by additional illustrations.

The work is divided into two parts. Part First embraces consideration of—1. The closed female pelvic floor; 2. The pelvic floor opened up naturally; 3. The female pelvic floor displaced pathologically; 4. The pubic segment in detail—perineum, bladder, retro-pubic fat. Part Second contains a description of—1. The pelvis explored manually; 2. The pelvic floor opened up artificially; 3. The pubic segment of the pelvic floor supported artificially.

The first part of the work is by far the most original and interesting. It could, however, with advantage have allowed of a little more elaboration. The author proceeds from step to step in his reasoning, using so few words that the work, from its brevity, conveys an impression of dogmatism to the reader which we feel sure Dr Hart never intended. We should have liked, also, a little more attention to the literary style. We do not like the obsolete word "sag," even though it is now common in America. The word "prize," improperly spelt for "prise," to tilt, is purely colloquial, and should not be employed in ordinary scientific language. We notice, also, the term "infra-vaginal portion of the cervix uteri" is mentioned; but while the cervix uteri has a supra-vaginal portion and a vaginal portion, we have yet to learn where the infra-vaginal portion of it is placed. These, however, are comparatively unimportant matters.

We are glad to be able to agree with the main conclusions arrived at by the author, and consider that he has established on an anatomical basis the physiology and pathology of the pelvic floor as it has been wont to be taught by the best clinical observers. But, besides this, he has contributed largely to our knowledge of this important structure, and presented the whole subject in a light that is both convincing and original. His separation of the pelvic floor into an anterior and posterior segment, and his investigations into the important difference of the two physiologically and pathologically, considered in reference to the unimpregnated condition and during delivery, are, to our mind, exceedingly valuable. His view that so-called prolapsus uteri is a misnomer, and is really a subpubic hernia, of which the uterus is only a part, and indeed a small part, is undoubtedly true, and is the view that was strongly impressed upon our attention many years ago by Dr J. M. Duncan.

In regard to the function of the perineal body and its relation to the pelvic floor and to prolapse, we think Dr Hart has hit the happy mean, neither erring in the direction of overvaluing nor of underestimating its importance. He maintains that its function is to strengthen and support the anterior part of the posterior segment of the pelvic floor, and that it has important, though by no means all-important, action in the prevention of prolapse. We hardly feel inclined to agree with his conclusions respecting the upwards displacement of the anterior pelvic segment in ordinary delivery, and feel disposed to consider that, though there is much separation of the anterior from the posterior segments during parturition, there is, on the whole, downwards displacement of both under ordinary circumstances. We do not think that Dr Hart takes sufficient account of the effects of abdominal pressure and of the uterine pelvic attachments, other than the vaginal, in keeping down the fundus, and by that means the anterior section of the pelvic floor, during delivery. Again, though honestly striving to do so, we have not been able to make out that marked retraction of the tissue in the anterior part of the vulva which Dr Hart thinks he has made out; and we think, also, the too common pathological symptom of prolapse of the anterior lip rather militates against the correctness of his views. With his observations respecting the treatment of uterine displacement, and the action of the Hodge or the Smith pessary, we in general agree, although we do not think he makes sufficient distinction between the action of such pessaries on a retroversion and a retro-flexion, and, indeed, look upon Dr Hart's reference to flexions as somewhat incomplete. Dr Hart might do well, we think, to consult Dr Granville Bantock's pamphlet on this subject, where he will find essentially the same views enunciated as those held by himself, and the greater difficulty involved in the treatment of retroflexion vigorously grappled with. Dr Hart is, to our mind, unfairly severe upon the Ferguson's speculum. It is true that it has the misfortune of closing the os uteri; but it gives good light, and, with proper management, can so thoroughly explore the vagina that it surely does not deserve to be spoken of in such condemnatory terms. It may be nothing to Dr Hart, working with plenty of assistants, that a speculum may be used without a third party; but to every gynæcologist in private practice this is a matter of great importance.

We think, also, Dr Hart ought to have bestowed a word of commendation on Neugebauer's speculum, which opens up the external os uteri by traction on the vaginal attachments of the cervix, and has the additional merit that it can be used without an assistant. For our own part, we prefer it in ordinary cases to both Ferguson's and Marion Sims', though, of course, for most operative purposes the Sims' speculum is by far the best. We are accordingly greatly astonished that Dr Hart has omitted any reference to it, as it largely serves to obviate the deficiencies which he attributes to Ferguson's speculum.

Taken all in all, however, the essay is one of much originality and ability, devoted to the elucidation of an important and hitherto imperfectly appreciated subject. The author has done his work well, and in our opinion has settled the main disputed points connected with the function of the pelvic floor in its physiological and pathological relations. We cordially recommend the book to the attention of our readers, feelng assured that it is worthy of careful study, and that its perusal will afford them much satisfaction.

Atlas of Skin Diseases. By LOUIS A. DUHRING, M.D., Professor of Skin Diseases in the Hospital of the University of Pennsylvania, etc. Part VIII. Philadelphia: J. B. Lippincott & Co.: 1880.

ANY one in looking over this Atlas must be struck with the reality of the portraits contained in it. There is no attempt to form a fancy picture by skilfully combining the features seen in different cases, but each plate represents an actual example of a skin disease. The part before us shows characteristic specimens of erythema multiforme, psoriasis, syphiloderma tuberculosum, and what Dr Duhring prefers to call tinea trichophytina, explained as tinea circinata and tinea tonsurans. The first plate represents a disease fairly common, in its most typical situation, the papular variety of erythema multiforme as met with on the backs of the hands. Dr Duhring has done good service in publishing this plate, since none of the more readily accessible atlases furnish a good specimen. The variety in form, in colour and tint, and in the lesions themselves, which all combine to give a reason for its name, are accurately given, and from this drawing alone one who had never before seen the disease would with certainty recognise it. That phase of psoriasis is delineated in which it imitates more or less closely some of the ringed forms of erythema, and also tinea circinata maculosa, and its distinguishing characters have rarely been better hit off. The protean forms of syphilitic eruptions are endless, and under the head of tubercles many are met with. One of these is well shown on the face, forehead, and neck, and not only are the tubercles themselves illustrated, but, as is constantly seen, the cicatrices remaining after the healing of previous ones. With a plate figuring tinea circinata on the neck and cheek, and tinea tonsurans on the scalp, the part is completed. The features of the disease in both situations are unmistakable. The letterpress accompanying the chromo-lithographs is written in Dr Duhring's clear yet terse style, and well brings out the diagnostic points to be specially attended to. There is certainly no atlas yet published which presents so many valuable original illustrations of skin diseases commonly met with, and this cannot fail to commend it to all well-informed medical men.

Archives of Dermatology: a Quarterly Journal of Skin and Venereal Diseases. Editor, L. DUNCAN BULKLEY, A.M., M.D., Attending Physician for Skin and Venereal Diseases at the New York Hospital, etc. Vol. VII., No. 1, January 1881. New York: G. P. Putnam's Sons.

WE have often had occasion to admire the earnestness with which Dr Bulkley devotes himself to his specialty; and though he writes much, it is always to the purpose, so that one is sure to learn something suggestive from any article which flows from his pen. But in nothing is his energy better displayed than in the manner in which he conducts the *Archives of Dermatology.* Difficult as is the task of an editor of a medical journal, it is much more so when the subject to which it is devoted is a comparatively limited one. Dr Bulkley is ably assisted by a numerous staff of collaborators, among whom are Mr Malcolm Morris and Dr T. C. Fox of London. The present number appears in an improved form; the type is larger, the page wider, and the paper luxurious. Besides some excellent digests of current literature, it contains some peculiarly good original articles, more particularly those by Dr Greenough on Herpes Progenitalis; by the Editor on the Treatment of Eczema of the Hands and Face; and by Dr Atkinson on Kerion Celsi. All these contain much information, both new and valuable. Altogether the *Archives* deserves an extensive circulation.

Ringworm: its Diagnosis and Treatment. By ALDER SMITH, M.B. Lond., F.R.C.S., Resident Medical Officer, Christ's Hospital, London. London: H. K. Lewis: 1880.

As representing the results of ten years' exceptional opportunities of studying a common and most vexatious disease, Dr Alder Smith's little work will be welcomed by many a busy medical man. The clinical history and course of ringworm have been well worked out, though even to this Dr Smith adds something. But it is the treatment of obstinate and long-standing cases which will induce most men to turn over these pages to see if any fresh and hopeful suggestion may be found. From experience of the examination of many children, he finds that, where a boy or girl has had ringworm within a year or two of his seeing them, the disease has in most not been really cured. Treatment had been continued till some new hair made its appearance, then it was abandoned, though many diseased stumps remained. He draws, therefore, particular attention to a variety which he calls *disseminated ringworm*, rarely diagnosed, and most chronic and difficult to cure. In this the hair grows freely and firmly over the head; if patches existed earlier, none are seen now; the skin looks generally healthy, perhaps almost free from scurf, but numerous isolated stumps or groups of stumps are seen here and there, often scattered all over the scalp. Dr Smith rightly insists strongly, all through the volume, on the necessity for careful search for these diseased stumps. So long as these remain they act as foci whence new outbreaks of disease constantly arise, and it is from such stumps, which are loaded with fungus elements, that infection to others is spread. So impressed is he with the necessity for removing these, that he has invented a special form of forceps which are admirably adapted for seizing and extracting them. Much valuable information will be found here as to the best modes of dealing with ordinary cases of tinea tonsurans, but it is with a special mode of procedure, directed against inveterate examples, that Dr Alder Smith's name has been especially connected. While in general the amount of inflammatory disturbance caused by the trichophyton when it invades the scalp is inconsiderable, certain cases ever and anon crop up in which this goes to great extent. These have been long known as kerion, from the honeycomb-like aspect the swollen and boggy surface presents. Much light on its nature has quite recently been thrown by an admirable communication of Dr Atkinson, of Maryland University, presented to the last meeting of the American Dermatological Association. He shows that kerion may occur under two aspects—one in which the inflamed follicles and glands pour out a mucoid secretion which is not by any means unfavourable to the free growth of the parasite; and another where pus, a true parasiticide, is abundantly produced, and in which, in consequence, entire and rapid disappearance of the disease follows. It is this last which Dr Smith endeavours artificially to imitate by the use of croton oil. We must, however, refer our readers to the book itself for directions as to the cases which are suitable for such treatment, and for careful directions as to the manner in which this remedy is to be used. Dr Liveing has given his valuable testimony in favour of its employment in certain well-defined varieties of the disease in a recent number of the *British Medical Journal.* It cannot be too much insisted on that it must not be rashly resorted to. Long ago Mr Erasmus Wilson used croton oil as a stimulant in cases of alopecia, but the vagaries in which it indulged, and the results produced—which nearly led in one case to an action against him for damages—caused him to discontinue it. There is still much to be learned about ringworm, and Dr Smith could scarcely do a greater service than by employing his unrivalled opportunities in striving still further to elucidate these. As it is, the book will be found one of the most reliable guides to the successful treatment of ringworm that we at present possess.

Clinical Lectures and Cases. By HENRY THOMPSON, M.D., Consulting Physician to the Middlesex Hospital.

THIS is a collection of thirty cases, with remarks and lectures. They have been all published already in the journals or in the Transactions of the Clinical Society of London. The cases are all of considerable interest, are well recorded, and the remarks and lectures upon them are very practical.

On one only would we offer any comment. The case was one of intestinal obstruction, where Amussat's operation was performed on the tenth day, when the patient was in a dying condition; in fact, the patient died during the operation. In his notes on the case Dr Thompson says, "If the exact lesion had been known beforehand, an exploratory operation, promptly performed on admission, might have saved the life of the patient, ... for the adhesions were not extensive." This being wise too late is unfortunately rather common. In the present day of antiseptic surgery, and with ovariotomy established as a most successful operation, we should be more ready to resort to surgery in cases that are doubtful except as to their ultimate issue.

Dr Thompson's volume does him credit far more than if he had attempted to write something new and startling. Cases well recorded, such as we have before us, are of more real value to the profession than the many books which are being written merely for the purpose of making the writer more notorious.

Manual of Surgery. Fairlie Clarke. 3d Edition. Renshaw: 1880.

Surgical Diagnosis. Heath. Churchill: 1879.

Practical Surgery. Mears. Philadelphia: 1878.

Mr Fairlie Clarke's "Manual" is already well known, and this third edition does not require much notice at our hands. It has been enlarged, of course, and "brought up to date." We cannot honestly say much to recommend the book, which, professing to be a "*multum in parvo*," aims at too much, and consequently is fragmentary. What there is, however, as far as we have read, is sound and good.

The *Practical Surgery* of Dr Mears also aims at a great deal, and consequently is sketchy. There are numerous illustrations, and indeed this is quite the feature of the little book. Many of these we recognise as old friends, being already well acquainted with them on this side of the Atlantic.

We have something more to say of Mr Heath's book, which has the merit of being in the line of meeting something like a requirement on the part of students. Diagnosis is the thing of all others in which a student feels he is deficient, for, of course, the power of recognising diseases comes only by experience. Mr Heath proposes to shorten the process, and has compiled a list of various conditions of the body and the causes which may lead to these. We have looked through the book, and found many trivial as well as serious affections alluded to, all of which seem to have about an equal amount of space and attention devoted to them. The whole is prefaced by a most elaborate system for taking cases, which fills several pages of the book, and would require very long and careful study before any one could remember it sufficiently to make any use of it.

On Aneurism. By RICHARD BARWELL, F.R.C.S. London: Macmillan & Co.: 1880.

MR BARWELL is well known as the advocate of the broad ligature, the special advantage of which is, that it constricts the artery without rupturing its coats. The ligature is prepared from the aorta of oxen, is made aseptic, and is expected to disappear in the wound. Lister's antiseptic treatment is considered essential.

Mr Barwell has perfect confidence in his method for cases of aneurism at the root of the neck. His success has been undoubtedly superior to that of every other surgeon in regard to ligaturing the subclavian and carotid low down in the neck; but we take leave to consider that the antiseptic treatment had as much to do with the success as the peculiar ligature employed. In fact, some of Mr Barwell's operations were performed with Lister's catgut ligature slightly untwisted to make it broader. There is one thing for which we have to thank Mr Barwell. In reviving the old flat ligature, for the old reason of fear of injuring the arterial coats, he has at the same time revived the old operation of Wardrop, the distal ligature, which undoubtedly is the best applicable to aneurisms at the root of the neck; and he has done good service, also, in showing that this operation may in certain cases be applicable to aortic aneurisms even.

For valuable remarks on this, we would refer surgical readers to the last two chapters of Mr Barwell's book.

We would recommend the author, should he deem a second edition necessary, to go over the book carefully, as there are a great number of mistakes. We give the following sentence from page 5, which seems to require some correction:—"The femoral, the external, and common iliac all lie deep and in close proximity to the subclavian at the second and third part of its course, at a distance from the companion vein." We confess to being quite unable to make sense out of the above. The plate at the commencement of the book is very confused, and shows nothing distinctly, except that the aneurism, which was stated to have been cured, was not by any means consolidated.

Cancer of the Rectum. By W. H. CRIPPS, F.R.C.S. London: J. & A. Churchill: 1880.

THIS little book is a reproduction in an enlarged form of the Jacksonian Prize Essay for 1876.

Mr Cripps has gone thoroughly into his subject, and, on the whole, the book is worth reading to any one who wishes to become acquainted with malignant disease of the rectum.

In the first chapter Mr Cripps attempts to give a definition of cancer, but leaves the matter where he found it. Epithelial formation is the visible product. But why that abnormal formation of epithelium should occur in certain persons and parts, while it does not occur in others, is not explained. One is always driven back to the opinion of Sir James Paget (with which Mr Cripps does not seem to agree) that there must be a hereditary influence. An unpleasant fact is deduced from the Registrar-General's reports, which seems rather to support Sir James Paget, viz., that the death-rate from cancer shows a steady increase, and this, be it remembered, notwithstanding the cases where malignant growths are successfully removed. In regard to the rectum, we are particularly interested in the results of treatment given by Mr Cripps. On the whole, these are encouraging in regard to removal by excision, always provided the disease is not too high up. Unfortunately, malignant disease, as we know, occurs more frequently in the upper than in the lower part of the rectum; but our author considers that early diagnosis should meet this difficulty, for usually the earliest formation is in the posterior wall of the bowel, where it is more easily got at and removed.

This book is neatly got up, and is illustrated by several beautiful plates of microscopic sections, etc. We would direct Mr Cripps's attention to numerous slips which occur throughout the volume, and which look very like carelessness, such as a "septa" (p. 37), "an inverted villi" (p. 49), "a nuclei" (p. 70), etc.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LX.—MEETING V.

Wednesday, 2d March 1881.—Dr P. H. Watson, *President, in the Chair.*

I. *Mr Chiene* showed a patient in whom he had divided the spinal accessory nerve in order to relieve painful spasm of the left sterno-mastoid muscle. M. R., aged 59, began work as a tailor when 14 years of age. For thirty-eight years he remained well. Seven years ago he first felt a difficulty in moving his right arm; three years after that he noticed that his speech became affected, and there was apparently excessive contraction of the right facial muscles and of the left sterno-mastoid. The contraction of the sterno-mastoid muscles threw the head forcibly and painfully to the right, so that the patient, when walking, had to hold his head with his right hand to counteract the tendency to jerking. The muscle was hypertrophied. He had now lost power of co-ordination in both upper extremities. He was admitted to Dr Brakenridge's wards in the

Royal Infirmary last September, and on the 4th of October Mr Chiene divided the external origin of the muscle. He says that for four days he was well, but soon became as bad as ever. He could not stand with both hands in his pockets, could not open a door, could not stitch, and could not bring his fingers together in front of him, his arms being extended. On the 11th of February Mr Chiene cut down in front of the muscle, exposed the spinal accessory, and cut away a third of an inch of the nerve. The muscle has since then been completely paralyzed, all jerking has ceased, and the man, on the day after the operation, regained completely the power of co-ordination of all the muscles of both upper extremities. There is no perceptible difference on his speech; the facial condition is slightly improved. Mr Chiene showed the case in its present state as the man was leaving for Newcastle. He did not attempt at present an explanation of the phenomena. He hoped that at some future time Dr Brakenridge would lay the case before the Society.

II. *Dr W. A. Finlay* showed a patient in whose case he had trephined the frontal bone two years ago on account of depressed compound fracture. The injury was caused by a heavy bag falling on the occiput and driving the forehead against the corner of a metal tank. On the patient's admission into hospital no symptoms of compression existed, but the outer surface of the depression was extremely concave, and after trephining (which was performed without delay), the inner table was found to be broken up on the dura mater. The man was now in perfect health, and for the last eighteen months had done full work as a labourer in Leith Docks. The case was also interesting as showing how the formation of new bone afforded protection to the brain after trephining.

III. *Professor Grainger Stewart* exhibited a patient whom he had introduced to the notice of the Society at the July meeting of last year—a case illustrating a form of disease hitherto undescribed, characterized by spontaneous hæmorrhages, alteration of the hair, relaxation of the muscular system, alteration of voice, and general debility. The patient exhibited the same features, with very slight modification, as he had done last summer, and as described in the *Edinburgh Medical Journal* for September.

IV. *Professor Simpson* showed the OVARIES and UTERUS from a patient who had been under his care in the Buchanan Ward of the Royal Infirmary, and of whose history the following is an abstract:—

M. P., aged 28, single, admitted 9th October 1880, complaining of dancing fits for the last six years.

General History.—Present attack. A dancing fit first occurred in the right arm and right leg about six years ago, coming on at a menstrual period instead of the menstrual flow. The doctor who was summoned gave her some medicine which brought on the dis-

harge in a few days. The second fit occurred nearly three weeks fter, shortly before the next menstrual period. It began in the ight arm and leg, and passed over the whole body. Menstruation was not again interfered with. For four years these fits occurred before each menstrual period. For twelve months (1878 to 1879) she was free from them, but in November 1879 they recurred. She was then treated by galvanism, and the fits became less frequent. As the fits still continued, though not so regularly, she was recommended to Professor Sanders in July 1880. She was admitted into the Buchanan Ward on the 9th October. Since her admission the fits have occurred less frequently and more irregularly. They frequently occur after a vaginal examination, but come on at other times also. Before the fit she usually feels a slight tremor in the limb to be first attacked. Gradually this tremor increases till the limb moves strongly but rhythmically, and soon the patient is compelled to move her legs as if really dancing. Sometimes the fits terminate with a spasm of the thoracic muscles, causing a sensation of weight compressing the chest, and rendering respiration difficult. She never utters any cry during the fit, but after it is over she generally feels very much exhausted. The dancing would continue till she drops with fatigue unless stopped, and this can readily be done by firm pressure over the left ovary when the patient is recumbent. She cannot, however, stop them herself.

Family Health shows nothing worthy of note, except that she has one sister who is twin with patient, and is affected in the same way as herself. She married about six years ago, and the fits came on after marriage. She has one child 5 years of age, and has had four miscarriages. Her sister's fits come on just before a menstrual period. In early life, and even now, the two are so like each other that their own sisters have mistaken the one for the other. Another sister has occasional neuralgic pains.

Sexual History.—1. Menstruation commenced at 15, is of the twenty-one day type, and lasts three to four days. As to quantity, she formerly required three to four diapers per day, but at the last period she only needed one per day. The discharge was delayed for a few days when the first fit occurred. It has been regular ever since. She has a good deal of pain at each menstruation, and sometimes the discharge is clotted. 2. *Inter-menstrual discharge.*—Of late she has been occasionally troubled with a yellowish-white discharge.

Physical Examination.—Mammæ virgin-like. *Abdomen.*—Inspection shows the mark of a recent blister in the left iliac region, and of a larger and older blister below the umbilicus, and extending into both iliac regions. Palpation causes pain in both iliac regions, but more especially in the left. Percussion gives the normal tympanitic note all over. *External pudenda.*—Nothing worthy of note. *Per vaginam.*—Orifice patulous, walls moist, cavity roomy, os small and virgin-like, looks downwards and backwards. Cervix feels cartilaginous. *Bi-manual.*—Size, shape, and consistence of uterus normal. The fundus is felt lying forwards and somewhat to the left side. There is considerable thickening in the left lateral fornix, around the left ovary. Sound passes 2½ inches to the front and left side. The respiratory, circulatory, and digestive systems show nothing worthy of note.

2d December 1880.—After being examined at the clinique to-day, the patient took a fit, which was easily stopped by pressure over the left ovary while the patient was in the recumbent posture. She took another fit about one o'clock, though not again interfered with in the way of examination. This fit passed over the whole body, and was stopped in the usual way.

5th December 1880.—A fit occurred without any provocation, and was easily stopped.

9th December 1880.—Had a fit to-day after being examined at clinique. She had another fit in the afternoon. She was quite free from fits for the following week, but on the 17th December, when the menses should have appeared, she had two fits, one between five and six, the other between eight and nine. During the fits she is quite conscious, and has no pain. There is no difference in the sensibility to touch or pain in the two sides of the body during the fit, but the general sensibility to pain is not so acute while a fit is present as at other times. Motor, reflex motor, and sensory functions normal at other times.

1st January 1881.—Patient was operated on for removal of both ovaries. She was prepared for the operation and then put under chloroform. The surface of the abdomen was carefully washed with carbolic lotion and then with turpentine. An incision 3 or 4 inches in length, in the middle line between the umbilicus and pubis, and carried down to the peritoneum, which was carefully opened. The omentum and bowels were then carefully pushed up, and the ovaries reached. These were found not to have contracted any adhesions, and after ligature of their pedicles both were removed. They were found to be of natural size and appearance, and were set aside for microscopic examination. After the operation the patient's pulse rose gradually, being 120, full and bounding, on the same evening; 132 next morning, and varying from 130 to 140 till the night before she died, when it was 152. The temperature was 99°·4 on the same evening. and varied from 100° to 102° on the following days. The ordinary antipyretics had no effect on the pulse or temperature. There was pain felt in the epigastrium on the same evening, and tenderness over the whole abdomen subsequently. Tympanitis was considerable on the third day, and the passing of the rectal tube and enemata gave no relief. The wound was examined on the third day, but showed no tension or inflammation round the stitches. Patient died on the morning of the sixth day after the operation. The post-mortem showed abdomen to be much distended, and it contained a considerable quantity of purulent-looking effusion. The uterus was removed, and shows the stump of the ovary with the ligature on the left side. The ligature was pulled off the stump of the right ovary on cutting out the uterus. The uterus is bilocular, a septum extending to the vaginal portion of the cervix dividing it into two cavities.

V. *Dr P. Heron Watson* showed TWO DRAWINGS and TWO PHOTOGRAPHS of CASES OF HYPERTROPHY OF THE TONGUE, with the portions of the tongues removed by means of the thermo-cautery, and a MICROSCOPIC PREPARATION, stained and mounted, from the second case, showing that the hypertrophy was due to a lymphangiomatous development of the parts. The stained structures were muscular fibre and an increase in the connective tissue of the organ; the spaces were vast dilations of the lymphatic vessels, which formed cysts, some of them filled with indifferent cells. In the former case Dr Watson had operated successfully some years ago. In the latter he operated the other day. In both cases most careful palliative treatment had been adopted before the cases were placed under his care. In neither of them did this palliative treatment prove advantageous. The nature of the enlargement rendered it sufficiently obvious that no treatment short of the removal of the protruding part of the organ was likely to be of much permanent avail. It was interesting to note that in the early cases where this affection was successfully treated the removal was effected by the use of the red-hot chisel, the tongue having been supported upon a spatula of wood as a preliminary step. In more recent times the thermo-cautery afforded more satisfactory results than entire excision by the knife or scissors or the use of the ecraseur.

VI. *Dr Church* showed a specimen of the ASCARIS LUMBRICOIDES, 10½ inches in length, which had been vomited by a lady. For many weeks she had suffered pain, at first referred to the lower part of the abdomen, but latterly to the region of the stomach. She had frequently felt sudden craving for food, and at night had suffered from starting, and been disturbed with alarming dreams. The worm had made its way upwards in the alimentary canal to the stomach, and then had been vomited.

VII. *Dr Grainger Stewart* then read his paper on PARALYSIS OF HANDS AND FEET FROM DISEASE OF NERVES, which appears at p. 865 of this Journal.

The President opened the discussion.

Dr W. Allan Jamieson said that, in opening the discussion on Professor Stewart's paper, it was much to be regretted that too exclusive attention had been paid to the central origin of paralysis as compared with the peripheral; and thanks, therefore, were due to Dr Stewart for insisting on a nervous as opposed to a cerebral or spinal paralysis. The paper possessed peculiar interest to him, as tending to throw light on some otherwise obscure diseases of the skin. For example, Von Barensprung, Sattler, and Kaposi had shown that, in some instances of herpes zoster, hæmorrhage and other changes of a destructive nature had been found in the spinal ganglia. But there were some forms of zoster where the lesion seemed seated in the nerves themselves in their course. Such were cases where only one group of vesicles appeared. He had seen at least two cases where a single group of vesicles on an inflamed base came out in the axillary line. There were, again, cases where the first group of vesicles in zoster pectoralis showed themselves over the sternum, secondary groups following them, but nearer the spine. Again, there was a variety of pemphigus where a single bulla appeared, usually near the sternum. When this disappeared, a second bleb showed itself, and, after it had healed, a third. The form was known as pemphigus solitarius, and it was best explained by the occurrence of disease in one or two strands of a trophic nerve. Dr Stewart had, in his cases, given examples of motor, sensory, and trophic lesions, but in these the trophic was the only function interfered with. In anæsthetic leprosy, disease of the nerve trunks had been proved, and the same might be inferred to exist in morphœa or Addison's keloid, which was regarded by some—notably in this country by Mr Erasmus Wilson—as a remnant of true leprosy, once so prevalent in Britain. Most instances of this disease were nonsymmetrical, and a tendency to partial, even total, recovery in some cases had been conclusively demonstrated by Mr Jonathan Hutchinson. Dr Stewart had referred to the tendency to relapse which had shown itself, in some of the cases adduced by him, after apparent cure. This, again, had an interesting bearing on a form of herpes distinct from herpes zoster, viz., herpes progenitalis or preputialis. In this, vesicles appeared on the penis, on the prepuce or glans, or body of the organ, and these recurred again and again at uncertain intervals. The pathology of this disease was best explained by regarding it as due to peripheral disease of the nerves of the penis. Many other instances might be drawn from the domain of skin diseases, such as some forms of alopecia, or that variety of partial premature grayness of the hair where but one lock of a black or brown head of hair became white. The same peripheral nerve origin might explain cases of leucoderma. Again, some cases of rosacea and acne rosacea were very likely due to disease of the vaso-motor nerves. He had made these remarks to point out how suggestive in many directions the excellent paper of Dr Stewart was, and he was sure the Society were deeply indebted to him for bringing it forward. There was one question, however, which he wished to ask, the explanation of which had either escaped his notice or was, at least, not clear to him. If the cases described were peripheral, how did Dr Stewart explain their bilateral origin?

Dr Byrom Bramwell expressed the pleasure with which he had listened to the paper. He had been in the habit of regarding such cases as those described by Professor Stewart as due to a central lesion, and he saw nothing either in the clinical history of Professor Stewart's cases or in the physiology of the spinal cord inconsistent with such a view. A central myelitis, involving both the anterior and the posterior horns of gray matter of any given segment of the cord, would cause sensory, motor, and trophic disturbances in the parts supplied by sensory nerves entering, and by motor nerves leaving, that particular segment, and of those parts alone. If such a lesion occurred in the cervical region, sensation and motion in the lower extremities would be normal, for the conducting fibres through the diseased segment would be unaffected. Again, such a lesion (a central myelitis involving both the anterior and posterior cornua) might involve one side only. In that case motion and sensation would be affected on one and the same side, for the sensory fibres would be interrupted before their decussation. Dr Hamilton had reported that the nerve trunks, in the upper part of their extent, were healthy. That report, of course, confirmed Professor Stewart's view, for if the symptoms were due to a central lesion of the gray matter, the motor nerve fibres would be degenerated throughout the whole of their extent, just as in an ordinary case of infantile paralysis. Dr Bramwell asked how Professor Stewart explained the secondary ascending degeneration. It seemed to suggest the presence of a lesion of the cord itself at a lower level.

Mr D. J. Hamilton said there could be little doubt that the view taken of the case by Dr Stewart was the correct one, namely, that it was one of those very remarkable instances of disease commencing in the peripheral terminations of the nerves and spreading along their course for a certain distance upwards. No one could examine the preparations of the median nerve without being aware of the great amount of destruction that had taken place in some of its fasciculi, so much so that here and there not a single sound nerve-tube remained. A similar condition was visible in the tibials, and on proceeding higher up to the brachial plexus and sciatic nerve respectively the diminution in the amount of lesion became very marked. In the transverse section of the sciatic exhibited that evening the members of the Society would be able to see that there was not a vestige of the disease which was so prominent a feature in the peripheral branches.

So slight, also, was the cord lesion that it could barely be traced. It occupied Goll's and the direct cerebellar tracts, and was only rendered visible by the slight difference in transparency between it and the neighbouring columns. The conviction was irresistible that the disease of the cord was secondary, while that in the peripheral nerves was undoubtedly primary.

As regarded the actual lesion of the nerves, Mr Hamilton was of opinion that it was of the same nature as that which occurs in locomotor ataxia in the spinal cord. The great participation of the axis cylinders in it, and the fact that the axis cylinder was the part of the nerve-tube first affected, clearly showed that it was of a totally different character from that seen in ordinary trophic secondary degeneration. In locomotor ataxia he had been able to make out of late that one of the first changes which occurred was a contraction of the axis cylinder into a fusiform or spherical mass. This mass afterwards split into various smaller segments, which formed the so-named colloid bodies. Hence, in locomotor ataxia, absence of the axis cylinder and the presence of great numbers of colloid bodies were two of the best-marked features of the lesion. The sclerotic changes of that disease he regarded as secondary.

In mere secondary degeneration from trophic causes there was not any of the contraction of the axis cylinders. Colloid bodies did not form one of the histological features. The degeneration, as originally pointed out by Waller, is of a fatty nature.

Mr Hamilton had several years since made an experimental inquiry into the subject of myelitis, and found that in myelitis artificially produced the same contraction of the axis cylinder and fissiparous division into colloid bodies occurred as that seen in Dr Stewart's case. Since then, these observations had been confirmed by Stricker and several other Continental pathologists.

The conclusion, therefore, which he came to was, that the lesion of the peripheral portions of the nerves was of the nature of a chronic inflammation, and that the starting-point of the disease was peripheral, not central. The spinal cord lesion being so slight and of a different character from that of the nerves, he could not look upon it otherwise than as a secondary effect.

If the lesion in locomotor ataxia can start in the dorsal region and spread upwards, he did not see why, in a part of a nerve-trunk lower down, there should not exist a similar lesion pursuing the same course. What determined its commencement in so many of the peripheral nerves at once he could not say, but neither could we say what was the determining cause of the locomotor lesion originating in the lower dorsal region, and almost invariably in one tract of the spinal cord.

Dr Clouston agreed with the previous speakers as to the great value and interest of Dr Stewart's paper. They had had a new disease described clinically and pathologically. Another step had been made in the process whereby the vast and intricate field of the neuroses was gradually becoming mapped out into the pathological entities composing it. If the discussion was confined strictly to the peripheral neuritis described by Dr Stewart, he had treated it so exhaustively that there was little to say; while if the Society went into the whole field of nervous symptomatology, pathology, and physiology which had relationship to the subject of the paper, it would never end. Dr Hamilton seemed clearly to have shown that this was a disease of the neurine itself, and not of he packing tissues or bloodvessels, differing in this respect from nerve syphilis. He had been in the habit of roughly dividing in his mind gross and visible diseases of the nervous system into those primarily affecting the packing, embedding, and blood-supply tissues, and those affecting the neurine itself, regarding most of the former as being curable and most of the latter incurable. The typical diseases of the latter class were progressive, and therefore fatal in time, such as general paralysis, locomotor ataxia, and Duchénne's disease. Dr Stewart's paper, and the examination of his specimens, had gone far to weaken his former belief that when the neurine of the cells of the axis cylinder of the fibres was affected, as these were under the microscopes on the table, the disease must necessarily be an incurable one, and would probably be a progressive and fatal one. If nerves with the axis cylinders of their fibres so affected were capable of complete recovery, then his former ideas of what was possible in the neuroses were greatly enlarged. This was the chief effect of hearing the paper on his mind. So far as he could judge from their appearance, these diseased and altered axis cylinders were precisely like the nerve-fibres in the early stages of locomotor ataxia, in myelitis, in inflammatory softening of the brain, etc., all of which were followed by permanent lessening or loss of nerve function. We must seek for some new test to distinguish between the curable and the permanently destructive nerve lesions other than these now available for us. As regarded the apparent disease in the outer nerve-strands of the posterior portion of the cord, he must say such a condition, with sound nerve fibre intervening between it and the peripheral neuritis, was a totally new fact, and a very surprising one. No law of nerve function or of nerve pathology with which they were at present acquainted would serve to explain it. He could have understood the gray matter of the cord being affected in accordance with the ordinary laws by which disease or atrophy of the central gray nuclei in which they terminate, or to which they are related functionally, follows disease or loss of function of the peripheral fibres or of the organs which they supply. But why the fibres in the cord in that position, which were merely the continuation of peripheral nerves, should be affected, he could not understand. The question naturally suggested itself, Might the real origin of the disease not be in the cord?

Dr James Carmichael referred to a case, lately under his care, of a young man, about 25 years of age, suffering from symptoms of incipient phthisis, who had local paralysis of the extensor muscles of one leg, which completely recovered in four or five weeks. In progression the toes drooped, and the power of extending the foot was lost. Cutaneous sensibility over the anterior and external surface of the leg was abolished. The paralysis corresponded closely to the distribution of the external popliteal nerve. The interesting point about the case was the completeness of the paralysis and the perfect recovery of nerve function within such a limited time. In thinking over the probable pathological condition of the nerves in this case, he could not help thinking that the lesion must be of an inflammatory nature not having gone on to degeneration, although Dr Stewart had indicated his opinion that complete recovery could take place even in such circumstances.

Dr Grainger Stewart said that he was greatly pleased to find his anticipation confirmed regarding the applicability in many directions of the facts which he had brought forward. He had himself selected as illustrative the bearing upon locomotor ataxia, but that was only one instance of many, and he was glad to find that Dr Allan Jamieson, as a specialist in dermatology, had recognised the fact that the observations described were fitted to throw light upon obscure questions in his department, while Dr Clouston had so lucidly stated some of their bearings upon brain diseases. With regard to the questions suggested by Dr Byrom Bramwell, he should say, as to the first, viz., how he could suppose the secondary degenerations found in the cervical and lumbar enlargements to be due to changes in the periphery of the nerves, he must refer to what he had stated in the paper, viz., that (1) the lesions found in the cord were precisely in the situations proper to ascending degenerations; (2) that there were two foci of secondary degenerations; (3) that no lesion of the cord existed which was capable of explaining the degenerations; (4) that the seats of the degenerations corresponded to the spinal connexions of the nerves which had been found to be diseased, and that therefore he saw no reason for doubting that the cord changes were secondary to the nerve changes. But, as had been pointed out in the paper, it appeared to be a new fact that changes in the lower stretches of nerves could produce such secondary degenerations apart from simple extension of an anatomical change, and that this appeared to him a most important and interesting point in connexion with the case. As to Dr Bramwell's second inquiry, viz., whether the symptoms might not have been due to disease of the whole of the gray matter of certain portions of the cord, he could only say that it was obvious that such a lesion as had been suggested must lead to sensory, motor, and trophic changes, but that they could not lead to such symptoms beginning at the toes and the finger-tips and spreading steadily upwards, and that therefore an accurate clinical observer studying such cases must feel himself compelled to reject that hypothesis. Moreover, the study of Cases I. and II., which had recovered, had led him (Dr Stewart) to express to the clinical class the opinion that the process must be regarded as a disease of nerves rather than of nerve centres, and, at the bedside study of Case III., to establish definitely that diagnosis whenever the patient was examined; that, before the post-mortem examination, Dr Hamilton had been told precisely where the exact seat of the esion was, and the autopsy, as had been demonstrated, justified he diagnosis. In these circumstances, he failed to see how any ne could longer remain in doubt as to the nature of the process. He was interested, also, in what Dr Carmichael had said, and had no doubt that experience would show that these cases were by no means uncommon. He cordially thanked the Society for the reception accorded to his paper, and the different speakers for their discriminating comments.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XLI.—MEETING IV.

Wednesday, 12th January 1881 —Dr Angus Macdonald, *President, in the Chair.*

I. *The President* exhibited (1.) the SKULL of a HYDROCEPHALIC CHILD, which he had lately obtained through the kindness of Dr Elder. The patient, an advanced multipara, had been several days in labour, but only sent for Dr Elder at midnight on the 15th December last. At that time it was impossible to make out the exact position of matters, as the head, which evidently presented, was situated high up, whilst the membranes protruded through the partially dilated os in a sausage shape. As the pains seemed more irritating than effective, Dr Elder administered an opiate. He again saw his patient at 4 A.M., when he found the case had made but little progress. About 7 A.M., the waters having now ruptured, Dr Elder, with the help of a nurse only, tried to apply forceps, but failed to get them to lock. He now, however, felt satisfied there was disproportion between the head and the pelvis, and thought that it was most probably due to hydrocephalus. He now asked me to see the patient with him. I accordingly provided myself with a small trocar and with Tarnier's forceps, and went to see the patient. On arrival I found the cervix nearly completely open, the fontanelles widely gaping, and by external palpation and double manipulation demonstrated that the head extended to nearly the umbilicus. I now punctured the hydrocephalic head. A large quantity of clear serum was rapidly discharged. The head collapsed immediately, and with the aid of pressure upon the fundus the uterine efforts were able to complete delivery. The head admitted afterwards about 80 ounces of fluid to distend it. The skull measures, now that it is stuffed—occipito-frontal, 7¾ in.; occipito-mental, 7½ in.; biparietal, 6¼ in.; bi-temporal, 5⅞ in. After delivery we were able to demonstrate the effects which over-distention of a hydrocephalic head exerts upon the upper part of the cervix, as shown by Bandl, and which was lately made the subject of a communication by me to this Society. Before delivery the parts felt quite thin over the entire head, so much so that we did not care to manipulate fre. After delivery, on passing the fingers through the outer os was they entered into a huge thinned and paralyzed cavity which had held the head, and which chiefly occupied the anterior and lateral portions of the cervical segment. It was impossible by the to tell whether throughout this cavity the uterus was or was not ruptured, as its surface communicated no resistance and was in a marked contrast to the lower part of the body which bounded it superiorly, and which was firm and well contracted. We could only infer from other symptoms that the uterus was unruptured. The patient made an excellent recovery. (2.) The BODY of a CHILD on which he had lately performed craniotomy. The patient was a primipara, æt. 34, and was attended by a student connected with the Northern Dispensary. There was no special sign of rickets upon her general build, and the only evidence we could find of any deforming influence acting upon her was an illness when she was 20 years of age, the result, as she believed, of ill-treatment at the hands of a stepmother. On account of this illness she was confined to bed for twelve months, and even after that period could only walk double for a considerable time. I was first asked to see her by Dr Chapman at 9 P.M. on 12th of December last year. The patient had been a long time in labour; the head was high up above the pelvic brim, and not offering to engage in it. The occiput, by external manipulation, could be made out to point towards the left. The outer os was about two-thirds dilated, and was dilatable. The pelvis was markedly ricketty in shape; the sacral promontory was much advanced forwards, the bone being bent round its third piece so that the upper end was rotated downwards and forwards, and the lower upwards and forwards. The cord was presenting and pulsating in front of the head. The external measurements were as follows:—External conjugate, 7 in.; distance between the anterior superior iliac spines, 9⅝ in.; distance between the iliac crests, 9¼ in.; internally the diagonal conjugate measured barely 4 in. From these measurements it was inferred that there might be 2¾ to 3 inches of a true conjugate, and accordingly it was proposed to attempt delivery by version. It was soon found that the measurement of the internal conjugate was wrong by half an inch at least, and that I could not push my hand through the brim to seize a foot, though I very nearly succeeded in doing so. Meanwhile the cord prolapsed and ceased to beat. Being satisfied that it was now impossible to bring a living child through the brim, if, indeed, the child were still alive, I proceeded to perforate, using Braun's trepan perforator, which worked well. The skull, as you will see, required to be very greatly broken down before it passed the pelvis. There was next found extreme difficulty in getting the shoulders through. On carefully measuring after delivery with the hand, I found the conjugate was not over 2¼ inches.

II. *Dr J. Halliday Croom* read his Quarterly Report of the Royal Maternity and Simpson Memorial Hospital, which will appear in a future number of this Journal.

Dr Simpson congratulated Dr Croom on his presenting the clearest and best systematized report that had been presented to the Society. He was sorry that they had still a considerable mortality in their hitherto most unfortunate Hospital. He was interested in the case of albuminuria, which he had seen with Dr Sidey. At first he took the patient into the Buchanan Ward in the Royal Infirmary, as he hesitated somewhat at sending her into the Maternity. He had seldom seen a more hopeless case, considering the amount of albuminuria and the fever and weakness. The case was further interesting as being albuminuria developed in the twelfth pregnancy. The patient also had purpuric spots on her legs, showing the bad state of her blood.

Dr Craig thought that in all reports names should be deleted.

The President agreed with the Society as to the value of the report. It was curious to note the number of fœtal deaths among the extern cases, and the absence of maternal deaths. He hoped that they would soon have a trimestre in the Hospital without any maternal deaths.

III. *Dr Hart* read his paper on the SHAPE OF THE EMPTY FEMALE BLADDER, which appeared at p. 794 of this Journal.

Professor Simpson had listened with great pleasure to Dr Hart's able and original paper. It was interesting to note that apposition of the anterior and posterior walls was the normal relation in the case of the other pelvic viscera when empty. Thus in the empty uterus, rectum, vagina, and perhaps the stomach, the anterior and posterior walls touched; and this prepared us to believe that when the conditions of the bladder were normal, the anterior and posterior walls would be found in apposition when it was empty. He hoped Dr Hart would continue to work out this subject.

Dr Halliday Croom was much interested in this as in all Dr Hart's papers on the sectional anatomy of the female pelvis. Tonight he felt that Dr Hart had contributed a valuable addition to our knowledge of the position and shape of the empty bladder. It was difficult to discuss an anatomical paper such as the present without a careful study of it. Dr Hart had shown that under certain circumstances the empty bladder was Y-shaped, viz., that in its collapsed condition it had a superior and inferior surface which were in apposition. In the diagram with which he illustrated this he pointed out that the condition of matters was pathological, viz., the uterus was anteflexed, and the cervix drawn back by a shortened utero-sacral ligament. Compared with the diagrams, say of Kolrausch or Savage, that of Dr Hart was very different. In these ordinary diagrammatic representations the bladder was round and thick. He was prepared to be shown that, so far as these diagrams represented the empty bladder as circular, they were wrong; but he thought that the empty bladder was not, as Dr Hart had shown, a collapsed, shapeless sac, but in the uncontracted condition maintained a certain firmness and an ovoid form. He thought it was hardly possible from a vertical mesial section to draw a correct idea of the shape of the empty bladder in life. He would have expected to find the anterior and posterior walls in apposition, as shown in the diagram of Heitzmann to which the author had drawn attention. Again, he was struck with the remarkable thinness of the bladder walls, a condition which the sections showed well, but one to which his attention had not been previously specially directed. He was glad Dr Hart had referred to the height and mobility of the fundus uteri, as he thought this was a point not sufficiently insisted on, more especially in making a conjoined examination of the uterus. As usually shown, the inexperienced practitioner might easily press the tips of the fingers of his external hand over the brim of the pelvis, and fail to find a uterus, although, by passing his hand a little farther up the organ would readily become apparent.

The President remarked that he had listened with much pleasure to Dr Hart's original and thoughtful paper, and hoped it was an earnest of still more important contributions from him to the anatomy and physiology of the bladder. They all knew what Dr Hart had done for the perinæum, and he hoped that this was the commencement of a similar series of papers upon micturition; for, notwithstanding all that had been done for that subject, it must be confessed that the theory of micturition, in the human female, at any rate, was in a very unsatisfactory condition. The idea that the bladder, when empty, was a rounded or globular mass, as referred to by Dr Croom on the authority of Savage's plates, was, it appeared to him, untenable; for if that was the condition of the empty female bladder, then we ought to be able, with the bimanual manipulation, to feel the tumour it formed and to map out its rounded outlines. But this we could not do in the case of the healthy female bladder. No doubt, when the organ was thickened from disease one could do so. But he had searched, in a case he examined this morning, to see whether he could make out the outline of the organ, with special reference to the discussion to-night; but with the greatest care he could not define its limits. Then a favourite clinical question with him to students depended on the well-known fact that the sound will enter an empty bladder quite as far as it will a full one. On asking students how far a sound will enter the female bladder, the usual answer was, that this depended upon whether the organ was full or empty. Putting the matter to the test of experiment, it was easy to show that this was an entire mistake. It would thus appear that the real condition of the empty bladder was one of very low contraction, or rather of collapse. The anatomical facts pointed out by Dr Hart, and the majority of the sections exhibited, would tend also to show that the attachments of the bladder and the distribution of its muscular fibres are such as to lead us to expect that the normal condition of the empty bladder is such that its anterior and posterior walls should lie in apposition. He admired Dr Hart's exposition of this part of his subject much. He was also interested in the demonstration of the Y-shaped outline of the empty bladder, with Dr Hart's explanation of its probable mechanism. He was well acquainted clinically with the backward prolongation of the bladder as a troublesome pathological condition which was usually attributed to downward traction of a pouch of the bladder by the heavy uterus. But he did not understand that it was so common in a minor degree as Dr Hart's drawings from various sources appeared to demonstrate. He was hopeful that much good would come out of this inquiry, and that Dr Hart would ultimately throw much light into this dark region.

IV. *Dr Croom* then read for *Dr Ranking* SOME ACCOUNT OF A VERY SEVERE CASE OF MEMBRANOUS DYSMENORRHŒA, which appears at page 898 of this Journal.

Dr Simpson would have liked to have studied the case in detail. The swelling described seemed curious. In the treatment Dr Ranking had laid stress on the use of Donovan's solution. In his experience no medicament was so useful in membranous dysmenorrhœa as arsenic. The case was an interesting and important one.

Dr Croom was interested in the record of this case. The care and trouble bestowed on the case reflected much credit on Dr Ranking. The report was a valuable one. So far as his experience went, one got the best results in such cases from dilatation with tents and the application of counter-irritants to the endometrium.

The President thought such a carefully recorded case valuable. He remembered one case in his practice somewhat similar.

Part Fourth.

OBITUARY.

WILLIAM RUTHERFORD SANDERS.

WILLIAM RUTHERFORD SANDERS was born in Edinburgh on 17th February 1828. He was a son of Dr James Sanders, at one time a well-known physician in Edinburgh, whose work on digitalis may perhaps be said to have in some respects anticipated the modern doctrine of the use of that drug. The direct influence, however, of Dr Sanders senior over his son's medical career was probably small, as in September 1842 the whole family went to France on account of their father's health, and took up their residence at Montpellier, where the elder Dr Sanders died in 1843. Previously to this William Sanders had commenced his classical education in Dr Boyd's class at the High School, where, according to the recollection of his school-fellows, he was much distinguished for intelligence and general acquirement. It is also stated that in these days he was a fair musician and played upon the flute, an accomplishment, and even a capacity for accomplishment, which disappeared altogether, so far as known to us, at a more advanced age. Owing to the migration of the family, he did not pass into the Rector's class at the High School, but completed his literary education at Montpellier, where in April 1844 he took with distinction the degree of Bachelier-ès-lettres, returning to Scotland in June of the same year. In the following winter he devoted himself to the study of medicine in Edinburgh University, and in 1849, when he took the degree of M.D., he obtained a gold medal for his thesis "On the Anatomy of the Spleen," which was afterwards published in the first number (1850) of the *Annals of Anatomy and Physiology*, edited by the late Professor Goodsir. This monograph has been referred to in most of the standard works on anatomy and physiology, and gave undoubtedly the first impulse from the side of exact observation to the scientific reputation of the late professor. It contributed, also, in a remarkable degree to lay the foundation of his more directly pathological researches, inasmuch as the first notable contributions of an original kind which he made to that department of inquiry were connected with the supposed function of the spleen in connexion with blood-crystals (see Henle, in *Canstatt's Jahresbericht* for 1851, i. 37); and two years later (*Monthly Journal of Medical Science*, January 1853, p. 84) a further communication took place on those changes in the Malpighian corpuscles of the spleen, which were afterwards brought into relation (*ibid.*, February 1854, p. 187) with the pathological work of several other observers about the same time[1] in regard to the now well-known, but then very imperfectly understood, waxy, amyloid, or lardaceous degenerations in various organs. These observations, as well as subsequent ones in the April number, page 381, and November, page 468, of our

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[1] See for the history of this whole subject a review written by the late Dr Sanders in this Journal, March 1868, p. 835, of the first edition of Dr Dickinson's work; also a review on *The Lardaceous or Cholesterine Disease*, by the late Dr E. A. Parkes, *British and Foreign Medico-Chirurgical Review* for October 1854, p. 143; and finally, a brief note in the *British Medical Journal*, 19th April 1879, p. 585, by Dr Gairdner, as regards the dates and relative position of the Edinburgh contributions to the subject.

Journal, have always maintained their position as landmarks in the very interesting inquiry connected with this form of degeneration, and have been referred to not only by Virchow, the late Professor Parkes, and others, but also by Dr Dickinson in the much more recent discussion at the Pathological Society of London, as having led the way in the right direction in the investigation of this subject. Although Dr Sanders never held the official position of pathologist, he was all along a close and diligent observer of the post-mortem examinations in the Royal Infirmary, and for some months in 1852 he occupied the interim position of pathologist with great acceptance, obtaining thereby a copious store of materials for the above interesting researches. Previously to this he had studied for two years in Paris and Heidelberg, availing himself of all the modern resources for the prosecution of histological and pathological inquiries then known, and especially cultivating microscopic studies in physiological anatomy under Henle. He was thus enabled, on his return to Scotland, to fill with great advantage to himself and to the students the position of tutorial assistant in the University clinical classes; and from this position, no doubt, he derived not only a large measure of his own future excellence as a diagnostician, but a knowledge of the wants and difficulties of younger men following in the same path, which stood him in good stead afterwards, both as Physician to the Infirmary and as Professor of Clinical Medicine. His work in this, as in all other official positions, was characterized by great thoroughness and excellence, although unobtrusive and essentially subordinate. Some traces of it may be found in our own pages in the report, and more particularly in the microscopic illustrations, to Professor Christison's clinical lecture on Bright's disease of the kidneys (*Edinburgh Monthly Medical Journal*, June 1851, p. 562). In the same year he wrote for us an abstract of Claude Bernard's observations on the glycogenic functions of the liver, then quite new; and in the succeeding year he furnished a paper on Helmholtz's speculum for examining the retina, which was, we believe, the first well-informed notice in this country of the now everyday practice of ophthalmoscopy.

Not to dwell on numerous minor communications to medical literature made about this time, we must intimate his appointment to the office of Conservator of the Museum of the Royal College of Surgeons in 1853, a position which, held previously both by John and Harry Goodsir, descended to him in due course as one already known in Edinburgh circles, and able to turn to account the great opportunities it afforded for pathological study. In connexion with this position, Dr Sanders, at the request of the College, delivered, at various times between 1856 and 1858, interesting lectures upon the cell theory, the electricity of nerves, and on reproduction in the animal kingdom, etc., which lectures, however, we believe, have not been preserved in any authentic form. In the years 1854 and 1855 he gave a course of thirteen demonstrations on Saturdays, intended to introduce the rich stores contained in the museum to the notice of students of medicine and in 1855 he commenced a regular course of six months' lectures on Institutes of Medicine, including Physiology and Histology, with outlines of Pathology, and this course in the extra-academical school he continued to deliver up to the time of his appointment to the chair of Pathology in 1869, retaining at the same the conservatorship of the surgical museum, as above mentioned. In 1861 he was appointed Physician to the Royal Infirmary of Edinburgh, which brought him at once into notice as an independent practical teacher at the bedside. From that time onwards it may be said that his hold upon the students never for a moment relaxed; and although he never attempted to advance his position by any obtrusive displays of science or of art, the conviction of his genuine and serious devotion to his work, aided by his great power of lucid exposition, carried him forward in the path in which he soon gained for himself such distinction as to be, in the eyes of those who then had the interest of the medical school most at heart, among the most likely candidates for the next vacant medical chair in the University. In April 1865, he read before the Medico-Chirurgical Society what may be regarded as the first of his more important clinical contributions to science, afterwards published in our pages (May 1865, p. 987), "Case of an Unusual Form of Nervous Disease, Dystaxia, or Pseudo-Paralysis Agitans, with Remarks," this paper being the germ of an elaborate series of investigations, afterwards published in two articles in Reynolds's *System of Medicine*, vol. ii., on "Paralysis Agitans" and "Metallic Tremor." The bias towards the study of nervous diseases indicated in this paper was still further carried out by two communications in the same year,—one on "Paralysis of the Palate in Facial Palsy" (*Edinburgh Medical Journal*, August 1865, p. 140), and one on "Facial Hemiplegia and Paralysis of the Facial Nerve" (*Lancet*, October 1865, pp. 452 and 478). These two papers were mainly influential in clearing up a host of confusions and errors with respect to the relations of various cerebral nerves to hemiplegic and other forms of paralysis. From 1869 onwards Dr Sanders was connected more or less with the editorial department of the Edinburgh Journal, and wrote a good deal in the way of reviews, translations, and abstracts; and in 1866 several papers in this Journal and in the *Lancet*, upon the then comparatively recent subject of aphasia, attracted much attention, particularly as confirmatory of Broca's views; and we believe the first detailed historic account of the subject published in this country was that in our own pages. In the *Lancet*, in June 1866, he published a case of aphasia with lesion of the Island of Reil, extending into the external frontal convolution, in which the suggestion was made that the Island of Reil might probably be the true seat of lesion in localized aphasia.

Ve need not dwell on the numerous papers contributed by Dr anders, chiefly to our own pages, between this and 1869; but one f them, on "The Variation or Vanishing of Cardiac Organic Valvular Murmurs" (*Edinburgh Medical Journal*, January 1869, . 584), is distinctly an advance in the subject of which it reats, and has been accordingly referred to by numerous authories since that period. All these papers and memoirs were haracterized by the same studious accuracy and firm grasp of the whole pathological and practical relations of the subject; and thus, though none of his works had reached the dignity of a published volume, Dr Sanders's reputation was already established when he was called to fill the vacancy in the Pathological chair caused by the death of Dr Henderson in 1869. On that occasion the author of the present notice has a melancholy satisfaction in recalling his own testimony "that, from long and intimate knowledge of Dr Sanders, from having been associated with him in several detailed observations and researches not unknown to the profession, I have acquired a strong conviction that his success hitherto is only a first step in a career of distinction. He has, as it has always appeared to me, one of those well-balanced and thoroughly cultivated minds which imply a large reserve of power. In all his doings and sayings there has been a remarkable absence of self-assertion and a most scrupulous respect both for truth and for the rights and feelings of other men. And accordingly it may be predicted with some confidence that his reputation, already not inconsiderable, will increase more and more in proportion as the fruits of his later researches are gathered in." This estimate, although made under pressure of a special emergency, may yet stand as the deliberate judgment of one not likely to be deceived unless by friendship, a judgment, moreover, amply corroborated by subsequent experience.

In his character as professor in the University of Edinburgh we believe that there are no two opinions as to the eminence and the excellence of Dr Sanders. His clinical teaching is on all hands admitted to have been of the first order, and pervaded throughout not only by great breadth and sagacity in diagnosis, but by a high tone of moral earnestness, which tended to secure the deepest convictions as well as the intelligence of the student, and to quicken the sense of responsibility, which, as well as the love of truth, are so apt to be lulled to sleep when the teacher abandons himself to the influence of pet theories or egotisms of any kind. The same earnest and sincere character was carried by Dr Sanders into the practice of his profession, and gradually, though not, perhaps, rapidly, won for him the position he occupied at his death, notwithstanding many physical obstacles (of which more hereafter) and the presence of several distinguished rivals.

As the present writer, however, was only by hearsay cognisant of much that happened during the later career of his friend bearing on his relations with his professional brethren and immediate neighbours, he prefers to let one speak who, according to the *Lancet* of 26th February 1881, "by intimate sympathy and long friendship and co-operation, was well able to estimate his character and worth," and whom it is not difficult to recognise as one himself standing very high in the regard of the whole medical profession in this country: —

"Those who knew the hard preparatory work Dr Sanders went through, as well as the character of his mind, can best understand the loss which his death occasions. Those who were associated with him when he filled the post of Lecturer on Physiology know how faithfully he discharged the duties of that arduous and, in the extra-mural school, not very encouraging position. The familiarity which he had with the use of the microscope, at a period when such familiarity was not common, he had acquired under the distinguished Henle, then in the Heidelberg school, and that early made him an authority in physiological and pathological histology. This physiological work, preceding his work at the hospital as a clinical teacher, helped largely to give him that power of seeing through the mists of a case which characterized him; for his tendency, instead of magnifying the case and himself, was rather to beat down the mystery, as if saying, after a searching diagnosis, 'That is it, and that is all; or, at least, all that can be said about it.'

"While this genuineness as a physician was due partly to the thoroughness of his physiological and pathological attainments, it was due no less to the straightforwardness of his character, which led him to despise those arts which are, perhaps, too often employed to impress patients and the public. He was known among us as an unassuming, genuine man, on whom we could rely for a sound diagnosis and candid opinion; and even before he rose into prominence with the public as a consultant, he was one to whom his professional brethren, when suspecting that all was not right with themselves, would prefer to go for an opinion.

"As a teacher Dr Sanders was conscientious and thorough, despising the quackeries of the lecture-room no less than of the sick-room, and besides being clear, had a warm, earnest manner, the true eloquence of the medical lecture-room, all contributing to render him one of the most successful of teachers. As a clinical teacher he took a great deal of trouble at the bedside, spending, we believe, even to the last, a couple of hours daily at the Infirmary when he might have been making money elsewhere. His was the usual history of the deserving consulting physician: early resolve to rise by living laborious days, long years of hard work in comparative obscurity, followed by success, which, once begun, came on rapidly. He had for some time, to the satisfaction of all his friends (and it has been said he had no enemies), attained the foremost rank of consulting physician."

One important aspect of Dr Sanders's precept and example as a eacher deserves a word of notice here, in addition to what is uoted above. He was entirely superior throughout to the affectaion which often leads men aiming at eminence as practitioners to peak disparagingly of the science of medicine as opposed to the rt. Such persons are apt to forget, or perhaps do not choose to emember, that it is to the use of more scientific methods (although, ike other good things, these may not seldom be misused and nisapplied) that we owe nearly all that distinguishes favourably he practice of the present day from that of preceding ages, or, ndeed, sound practice from charlatanism in any age. Dr Sanders's irst care as professor of general pathology was to see that his students had the opportunities and the guidance necessary for securing an ample basis of demonstrated fact on which, in due time, a superstructure of true pathological science might be erected; and his latest as well as his earliest work bears testimony to the prominence in his mind of that essentially pure love of scientific truth for its own sake which has been in all ages the guiding star of truly great practitioners of medicine. The memoir which he contributed to our pages, in conjunction with Dr Hamilton, on "Lipæmia and Fat Embolism in the Fatal Dyspnœa and Coma of Diabetes" (July 1879, p. 47), was a practical evidence of this; and not less so was the address which he delivered to the Medico-Chirurgical Society not much more than a year ago (*Edinburgh Medical Journal*, February 1880, p. 731). Even amid the pressing calls of consulting practice, and amid distractions of a yet graver kind to which we shall presently advert, he never forgot the ladder by which he rose to fame, the only true ladder, it may be added, by which any man ought to rise on whom the training of the younger medical mind in any large degree depends; and no doubt it may be said of him that the confidence reposed in him by a wide circle was largely founded on the belief that he had so gained his eminence, and that a position attained by only the most legitimate scientific methods would never be abused to lower and baser ends.

And this leads us to touch gently on one aspect of Dr Sanders's career which, known perhaps only to a few of those who formed his acquaintance as a university professor, is nevertheless not without its lesson for all of us. No one nowadays can be injured or hurt by our saying here what is well known to some of his old friends (though never directly or indirectly alluded to by himself), that certain personal relations in which Dr Sanders was inevitably involved at the time of his initiation into the medical profession were of quite the opposite kind to those indicated above as affording the securest basis for a permanent reputation. Had he relied exclusively upon the advice of some (now long passed away from all human judgment) who were placed so as to have a fair claim to have acted as his mentors, he might have become a successful practitioner much earlier and in quite another way than he did; but had he followed that course, he would altogether have failed in carrying with him, as he did, the sympathies of his brethren, and especially of the eminent men to whom the whole profession in Edinburgh justly looks as its leaders in conduct. We have always thought that among the many remarkable things in our deceased friend's character, nothing was more remarkable than this—that without appearing to attach himself to any of the numerous coteries which have divided medical opinion in Edinburgh within the last thirty years or more, he never lost the respect of any of them; and this, too, when his position in entering on active life might naturally enough have led him into the thick of the combat, to his own ultimate disadvantage, if not ruin. There was in all this, of course, a good deal of self-discipline, and a habit of quietness and reticence which might have been regarded as almost in excess, were it not for the knowledge of the consequences which in his case might have arisen from an opposite course.

In January 1874 began the first of that long series of illnesses which suddenly revealed a wholly unexpected element of instability in a constitution previously more than ordinarily robust—illnesses which, we have now reason to think, may even have been connected, though remotely and obscurely, with the lesion which at last deprived us of his valuable life. For the present, however, we shall omit any strictly medical speculations on this interesting subject, reserving them for a future communication if, as we believe, the details can be made sufficiently interesting and at the same time sufficiently precise to merit publication. The illness of 1874, though not so severe as that which followed a year later, was one which kept the opinion of his friends long in suspense as to the nature of a certain painful induration in the abdominal wall, which ultimately proved to be a very slowly maturing abscess, but at first might have been easily regarded as involving suspicion of malignancy. The suspense to his friends was very trying; and the writer has a vivid impression even now of the relief to his own mind when it was telegraphed to him at a distance that pus had been evacuated from the slowly softening morbid growth which had puzzled diagnosis for weeks, almost for months. In due time, though again in a painfully uncertain and dilatory fashion, the abscess all but closed; and after an autumn spent in holiday-making—though not without obscure indications of something still wrong—he commenced again, in November 1875, the usual course of lectures on pathology, omitting, however, the clinical work at the Royal Infirmary. After giving only four lectures he was again laid aside, and this time to suffer from very deep-seated abscesses in the pelvic cellular tissue, confining him absolutely to bed for many months, and, by the sheer pain and exhaustion that they occasioned, running him as close as possible in the direction of a fatal issue, insomuch that some of his most attached friends entirely despaired of his recovery. By the care and skill of Mr Spence, however, aided by the not less devoted attention of many other friends, he was able to go in June 1875 to Switzerland, and, after four months spent there in repose of body and mind, to return apparently fit for duty; the measure of his duties being in this instance simply the measure of his ability for work, inasmuch as the reputation he had by this time acquired as a consultant insured him a busy life, even had he not resumed his academical lectures, as he did in the winter of 1875–76, with apparent heartiness and success. Indeed, at this time and during the succeeding summer, when the writer of these pages was in frequent communication with him, and when the tide of business was gradually rolling in upon him more and more, the only anxiety he ever expressed was the one most natural to a mind such as his, viz., lest he should fail to come up to the requirements of consulting practice, not in a physical sense, but as a matter of moral discipline and intellectual grasp of what was daily submitted to his judgment. In the summer of 1876, however, the evident prospect of a vacancy in the chair of Practice of Medicine obliged him to consider maturely the possibility of his becoming a candidate; and while he felt himself encouraged to this step by a strong concourse of professional opinion, he also evidently felt himself restrained by anxieties and doubts as to his ability to encounter the severe labour of an entirely new course of lectures, and one of such transcendant importance to the medical school. In the end the doubts and anxieties prevailed over the just and natural ambition, but not until the struggle and the suspense of judgment had been carried to a point which caused great anxiety to his friends, and involved many months of disquiet and sleeplessness, etc., to himself. Indeed, it may be said that on this occasion, almost alone throughout his career, did personal ambition appear to cause him any uneasiness whatever; the usual attitude of his mind towards professional success being that of waiting, not of pursuing. Long after the decision he allowed himself to be perplexed and worried with doubts as to whether he had done rightly, in a manner which almost seems to the present writer as though it was morbid, in a physical sense,—that is to say, as though the first foundations of future illness were then being laid in the delicate structure of the nervous organization. Be this as it may, after many months his mind appeared to have recovered its tone, his work was systematically and well done, and his holidays in the Highlands and elsewhere were thoroughly enjoyed. On the last but one of these holidays, viz., in August 1879, he mentioned on one or two occasions, in confidence, when walking over the hills at Urlar, certain derangements of vision and other phenomena which, seen in the light of what has happened since, raise questions of a kind with which it is impossible not to suppose that his own mind was more or less occupied; but to the world at large he appeared as having perfectly recovered. The first attack obviously connected with his fatal illness was on the 8th September 1880, when he became suddenly hemiplegic on the right side, retaining consciousness, but with aphasia all but complete. So sudden was the seizure, that hæmorrhage, and possibly ingravescent apoplexy, were for some hours regarded as not improbable; but after a few days he began to show slight improvement, and ultimately settled into an example of that curious and probably impenetrable mystery, a living, breathing, and in many respects normal and intelligent man absolutely cut off, by physical disease of one portion of the cerebral hemisphere, from communication with his kind by the one faculty which may be regarded as the unquestionable and exclusive endowment of humanity. What details of thought, apprehension, or inchoate expression may have been hidden behind the veil of this mystery in Dr Sanders's case can only be divined obscurely and in fragments; but surely a very pathetic and peculiar interest lies in the fact that his own attention had for many years been occupied with this special form of disease; every case of it occurring within his experience being an object of the most fresh and vivid interest for him, so that it is as nearly certain as anything can possibly be under the circumstances, that this vivid interest extended to his own case in the highest degree. We are perfectly well assured that many of the fruitless efforts he made towards expression by signs were directed by the desire to indicate not so much his personal wants as his sensations and disabilities. That his mind was actually occupied, in a truly scientific sense, with his own case during the latter weeks of his life was shown, among other things, by two circumstances, which we mention here without commenting upon them. One of these was the trouble he took to indicate clearly his desire to read and study certain volumes of Ziemssen's *Cyclopædia*, among which was the one containing Kussmaul's elaborate article upon disturbances of speech—certainly not a piece of easy reading even for a mind in good working order. The other incident was one which occurred very shortly before his death, viz., a successful attempt, by causing his attendant to hunt for him through the old volumes of this journal, to search out the well-known article of Dr Scoresby-Jackson on a case of aphasia succeeding typhus fever. What precise use he intended to make of these materials can never be known; but that he had in view, very deliberately, a certain definite use to be made of them is not at all doubtful to those who watched by his sick-bed. In one or two other respects his case suggests that of the late Lord Denman, who, during an attack of complete aphasia, succeeded in intimating to his friends his views on certain subjects, and even on the politics of the day, by causing passages to be copied out of newspapers and books as representing his opinions. It may fairly be surmised, that one so conscious of what might be taught to the world through the personal experience of an intelligent aphasic, was not wholly devoid of the impulse both to learn and to teach this lesson when himself suffering under this affliction—nay, possibly, was hoping against hope that he might yet live to teach it by speech or by writing; but if so, the hope was soon to be frustrated. The supreme will that guides the world of thought as of matter has ruled it otherwise. The veil, so far as this instance is concerned, is irremovably drawn down; the mystery remains unsolved. In February last an attack, equally sudden with that of September, but involving complete loss of consciousness, and all the other usual phenomena of an apoplectic seizure deeply implicating the respiratory centres, occurred, and after nearly twenty-four hours of unconscious and automatic existence, he expired on the 18th February 1881. Even the day before his fatal seizure he had been apparently as well as at any previous period since September, and had in a very touching manner indicated to his wife and family, by pointing out some favourite passages, what at least some of his thoughts were, and that they were of the same noble and steadfast order as those which sustained him throughout his earthly career.

We trust we have in this brief memorial given expression in some degree to what we, in common with the public and the medical profession, found to be most worthy of regard in the friend we have lost. To have said less would not have satisfied our own sense of what was fitting; to say more would be to run into danger of exaggeration or of empty laudation, from which he himself would have been the first to shrink back. We desire to part with him as with one whose friendship involved no stain of self-seeking or unmeaning compliment; and we desire also, even more than this, that the lesson of his life should remain, unvarnished by phrases of customary eulogy, to make its own deep and permanent impression alike upon the young who knew and loved him, and upon the readers of this journal, young and old, to whom his reputation cannot but be a valued possession.

THE LATE DR HANDYSIDE.

Many former students of Edinburgh who learned their anatomy under Dr Handyside will hear with regret of the death of their old and esteemed master. An Edinburgh man by birth and education, Dr Handyside took his degree in Medicine in the University of Edinburgh in 1831. That he distinguished himself among his fellow-students we have evidence in the fact that he was elected senior president of their Society, the Royal Medical. He was also medallist of the Harveian Society. He had been an apprentice of Mr Syme, which probably gave him his early bent towards anatomy and surgery. Connected as Dr Handyside was more or less intimately with the Anatomical School over the long period of nearly half a century, the notice of his work implies a reference to the various changes and vicissitudes of the school during that period. After pursuing anatomical study for a time in Paris and in Heidelberg under Tiedemann, he was admitted a Fellow of the College of Surgeons in 1833, taking for his probationary essay the subject of osteo-aneurism, which was published. He commenced as Lecturer on Anatomy in Edinburgh in 1833–4, or in the summer of 1834, making his beginning at No. 4 Surgeon Square, the house at the south-east corner of the old square, and rapidly rose to be a successful teacher of anatomy, with a good class. At this time the third Monro was Professor of Anatomy in the University; and in the extra-mural school, teaching anatomy, there were also Dr Knox, still with a large class, at Old Surgeons' Hall, next door to No. 4; Dr Sharpey, at No. 9 Surgeon Square, who became Professor of Physiology in University College, London, in the summer of 1836; and Dr Alexander J. Lizars, who became Professor of Anatomy in Marischal College, Aberdeen, in 1841. Dr Handyside used to say that he owed his first pupil to the satire of Knox on the presumption of so young a man setting up as his rival. Dr Handyside from the beginning gave prominence to the relation of anatomy to surgery, and in the summer session, besides the usual course of demonstrations and dissections, gave a full course of operative surgery. After five or six years, on his appointment as one of the surgeons to the Royal Infirmary, he relinquished teaching anatomy and began to lecture on systematic surgery, taking the lectureship at No. 1 Surgeon Square vacated by the retirement of Mr John Lizars from teaching, and acquiring the museum of Mr Lizars, a large and excellent surgical and pathological collection, for which, we believe, Dr Handyside paid the sum of £500. Other lecturers on Surgery at this time in the extra-mural school, besides Sir Charles Bell as Professor of Surgery in the University, were Dr John Argyll Robertson at No. 11 Argyle Square, and Mr Miller at High School Yards.

Important changes soon occurred in the University; the chair of Surgery becoming vacant by the sudden death of Sir C. Bell in 1842, the vacancy being filled by the appointment of Mr Miller; and the chair of General Pathology becoming vacant by the retirement of Dr John Thomson, the vacancy being filled by the appointment of Dr Henderson, then lecturing on practice of medicine, who was successful by a very narrow vote over the other candidates, Dr Craigie and Dr Handyside. Both of these chairs were at that time in the patronage of the Town Council. The subject of pathology was not then so marked off as now,—indeed, few subjects were,—and Dr John Thomson, the eminent pathologist, had been Professor of Surgery to the College of Surgeons and Professor of Military Surgery in the University before being appointed to the chair of General Pathology. The filling up of the chair of Surgery by a young professor necessarily affected seriously the prospects of extra-mural lecturing on that subject, and Dr Handyside considered it prudent to return to anatomy, which he resumed at No. 1 Surgeon Square with session 1842–43. There were at this time three extra-mural schools of anatomy in Edinburgh. Dr Knox had removed to the School of Medicine at No. 11 Argyle Square, and with a diminished class, the well-known events which led to the passing of the Anatomy Act, in 1832, having gradually and seriously affected his position as a teacher,—though we must declare our conviction that the public prejudice against him, so far s these events were concerned, was unjust. Dr Mercer was lecturing t No. 4 Surgeon Square to a fair class, finally relinquishing eaching in 1847; and at No. 1 Surgeon Square, Dr Allen Thomson, who had returned in 1841 to the Edinburgh extra-mural school in which he had formerly been Lecturer on Physiology, and atterly had also in part taught anatomy along with Dr Sharpey), after being Professor of Anatomy for two years in Marischal College, Aberdeen, had, we believe, the largest, and certainly the best-conducted of the four schools of anatomy then in Edinburgh. Dr Thomson's appointment in 1842 to the chair of Physiology in the University, in succession to Dr Alison, having left the School of Anatomy at 1 Surgeon Square vacant, it was taken up jointly by Dr Handyside, Mr Spence, and Dr Lonsdale. Mr Spence had been Demonstrator of Anatomy in the University. Dr Lonsdale, who had for some time assisted Dr Knox, had just arranged to succeed Dr Knox at No. 11 Argyle Square, having, we believe, paid to Dr Knox the sum of £900 for the museum and the undertaking by Dr Knox that he would not again lecture on anatomy in Edinburgh. When the news came out that the three teachers had united in a joint school, Knox, ever ready with his satire, dubbed it the Polygastric Institution. The arrangement was one of convenience. Dr Handyside, being engaged with hospital duties and in general practice, could give only part of his time, and that mainly in the lecture-room; Mr Spence was engaged during part of the day in surgery; and Dr Lonsdale attended to the details of the school. The combination resulted in an excellent school, which easily took the lead among the other schools of anatomy in Edinburgh. The teaching was active and good, both in the lecture-room and practical rooms; the pupils who had begun in the rival schools of Knox and Allen Thomson contended with each other for distinction, and altogether there was much enthusiasm in anatomical work in the school, under the stimulus of the three teachers in their several departments. Dr Handyside's systematic lectures were great, and Professor Spence's teaching of surgical anatomy was highly regarded, the thoroughness with which he taught the bearing of anatomy on surgery, no less than the beauty of his dissections, giving an interest to the subject which we believe has had an influence on the teaching of surgical anatomy not confined to the Edinburgh school.

After three years Dr Lonsdale left Edinburgh for Carlisle, his native place, Dr Handyside and Mr Spence continuing the school at No. 1 Surgeon Square in 1845–46, with Dr John Struthers as demonstrator in the practical rooms. The retirement at last of the third Monro, in 1846, from the chair of Anatomy in the University, and the appointment as his successor of Mr John Goodsir, then occupying the position of Demonstrator of Anatomy in the University, was a turning-point in the fortunes of extra-mural lecturing on anatomy. It was understood that Dr Handyside's having formerly left anatomy for practice, and his being so much engaged in practice now, told seriously against him in his candidature for the chair of Anatomy, which it was felt ought to be filled by one who gave his whole time to the duties of the chair. Dr Handyside now removed from No. 1 Surgeon Square to the school at No. 11 Argyle Square, along with Dr Struthers. The anatomy class in that school during the last four years had been taken by Dr Skae. Dr Handyside delivered the systematic course of lectures in that school during the winter session 1846–7; but finding little encouragement in the altered circumstances of the extra-mural school, he now relinquished anatomical teaching and devoted himself entirely to his practice, which had become an extensive and excellent one. The entire teaching of the Anatomical School at Argyle Square was now undertaken by Dr Struthers, who at the same time purchased the anatomical museum, which had come back to Argyle Square with Dr Handyside.

The period following the revival of anatomy in the University, in the change from Monro to Goodsir, was one of severe trial to the whole extra-mural school. It may give some idea of the depression of the Edinburgh school during the period of the third Monro to mention that the School of Anatomy at No. 1 Surgeon Square, under Drs Handyside, Lonsdale, and Spence, although the largest at the time in Edinburgh, did not number more than 155 students, while the classes of Dr Mercer and Dr Skae were not large, and no one attended Monro's course who was not compelled to do so under the then regulations of the University, which recognised no extra-mural teaching except in practical anatomy. The total number of matriculated students of medicine in the University had, under the third Monro, fallen from 900 to 330, while under the new professor the anatomy class bounded up, reaching, we believe, to from 300 to 400, and the number of students of medicine in the University and in Edinburgh rapidly increased. After the change of anatomical professor in the University the number attending the extra-mural anatomy class had fallen to from 50 to 60 students, and the other extra-mural classes suffered likewise, partly from this cause, partly from other chairs in the University being also ably filled. With the exception of chemistry, in which there were two lecturers, Dr George Wilson and Dr Thomas Anderson, the extra-mural school mustered only one lecturer on each subject, and in 1849 the lecturers were gathered together into one school (with the exception of Dr George Wilson, who preferred to remain in Brown Square, where he also resided) in the building erected, under an arrangement with them, by the College of Surgeons on the ground behind the hall of the college. The school building No. 11 Argyle Square, with the adjoining properties, was purchased by the Government as a site for the future Museum of Science and Art. Some of the old lecture-rooms in Surgeon Square, and old Surgeons' Hall there, were acquired by the Royal Infirmary for the extension of its buildings, and No. 1 Surgeon Square became the Phrenological Museum of Mr George Combe. From 1848–49, when Dr andyside had relinquished anatomy, till 1863, when he resumed it n the appointment of Dr Struthers to the chair of Anatomy in Aber-een University, Dr Struthers was the sole teacher of anatomy in he extra-mural school, Mr Goodsir being professor in the Univer-ity. Latterly the number of students of medicine in Edinburgh ad risen to about 600, the anatomy class in the University number-ng about 300, the extra-mural anatomy class about half that number.

Dr Handyside had meanwhile been engaged exclusively with is extensive private practice, but, unfortunately, his health giving vay, he was obliged to seek rest and change on the Continent; and n Dr Struthers's removal to Aberdeen, Dr Handyside was induced o resume teaching anatomy, taking up the class at Surgeons' Hall, which he continued to conduct till within a few weeks of his death, devoting the greater part of his time to the work of the school. Here he had also the labour of forming a new teaching museum of anatomy, the whole collection of human and comparative anatomy purchased from Dr Knox in 1842, together with that which Dr Struthers had formed, having gone to Aberdeen. It will be seen from the above narrative that Dr Handyside taught anatomy during about twenty-seven years. He did so under the disadvantage of being at the same time more or less engaged in practice, and of having twice to form a teaching museum, first when he began in 1833–4, and again when he resumed in 1863. As an exponent of anatomy in the lecture-room Dr Handyside was not surpassed by any one we have known. With a somewhat formal manner and a classical style of nomenclature, he was clear and emphatic as a teacher, and as a man was always proper and pure at a time when every teacher in these days was not so. He also insisted on the importance of dissection in the practical rooms, and in all places and at all times was most attentive and courteous to his students, whose respect and affection he possessed. We have heard him, after long suffering, at last rebuke an occasional inveterate idler on the back benches, but we do not recollect of ever seeing Dr Handyside angry. He was a master in the art of sketching, so valuable to the anatomical teacher. His pupils had often occasion to admire the skill and rapidity with which he sketched with coloured chalks on the black-board during lecture, making clear the intricacies of the folds of the peritoneum, the interlacements of the nerves, and the like, and did not admire it the less from the satire of Knox who had no gift in that direction.

As Surgeon to the Hospital, an office which at that time was tenable only for the short term of four years, and in his turn as Lecturer on Clinical Surgery, when he became senior surgeon, Dr Handyside was most careful and attentive to his hospital duties, always surrounded by a body of working dressers and clerks. He had a private journal kept, in addition to the usual hospital journal, of all the cases under his care, some of which he published from time to time. His case of amputation at the hip-joint for malignant tumour of the thigh-bone reflected credit on him as a operator. He paid much attention to club-foot operations, in which he gained a considerable reputation. It may be mentioned to Dr Handyside's credit, that he did not concur in the unqualified condemnation of the operation of ovariotomy which prevailed at the time he was attached to the Royal Infirmary. He operated first in 1845, in private, in a well-known case, to which he was called in by Dr Bennett when the other surgeons had declined to operate, and with success so far as the operation was concerned, although it was done by the large incision. Professors Simpson and Goodsir, Drs Campbell, Bennett, and others, were present at the operation. It may serve to show the complete change which has taken place in professional opinion in regard to the propriety of this operation—a change which we owe so largely to our townsman Dr Thomas Keith—to mention, that we recollect that when Dr Handyside read an account of this case at the Edinburgh Medico-Chirurgical Society, the other surgeons, to mark their disapproval of the operation, left the room when Dr Handyside rose to read his paper. The case was published in the *Edinburgh Medical and Surgical Journal*, No. 167. A second case in which he operated, also in private, and in which the method of passing the ligature out through the recto-vaginal pouch was adopted, was not successful; but the operation at that time was done by the large incision, the whole linea alba, from ensiform cartilage to pubes, being slit open, as we recollect, *without* bleeding from a single vessel.

Among Dr Handyside's other surgical writings were—"Cases in Surgery" (*London and Edinburgh Monthly Journal of Medical Science*, 1845), including on "Necrosis of the Thigh-Bone;" "Spasmodic Affections of the Larynx," including a case in which tracheotomy was performed through a bronchocele; "Amputation at the Hip-Joint," with figures of the tumour and stump; and "Caries of the Tarsus and Ankle-Joint," in which he described and figured a method of performing Syme's amputation at the ankle by antero-lateral flaps. Among Dr Handyside's anatomical and physiological writings were—"Outlines of Anatomy," mainly tabular views intended for the use of those attending his lectures; "Engravings and Descriptions of the Bloodvessels;" "Experimental Essay on Venous and Lymphatic Absorbent Systems;" "Sternoptixinæ Class of Fishes;" "Theory of Death from Air admitted into the Veins;" "Encephalocele;" "Acrania;" "Cyclo-cephalian Form of the Etmocephaloids;" "Subarachnoid Serous Sac;" and, among his later papers the references to which are before us, "Arrested Twin Development" (*Edinburgh Medical Journal*, 1866 and 1869); "Transitions in the Fœtal Heart" (*Proc. R. S.*, Edinburgh, 1869), in which he narrates, among other varieties, the occurrence of a valve at the mouth of the superior vena cava in a fœtus; "Quadruple Mammæ occurring in two Adult Brothers" (*Jour. of Anat. and Phys.*, 1872); "Hypospadia with Cleft Scrotum" (*Edinburgh Medical Journal*, 1873); "New Species of Polyodon," with an account of its nervous and muscular systems (*Roy. Soc.*, Edin., 1873 and 1874). His address on the occasion of his being elected, a few years ago, President of the Edinburgh Medico-Chirurgical Society, was published under the title of "Jubilee Chronicon of the Medico-Chirurgical Society."

Born on 26th October 1808, Dr Handyside had passed the allotted threescore years and ten. His strength had been failing during this winter session, but he was able to pay a visit in England during the Christmas recess, on returning from which he caught a chill, and was laid aside with various painful symptoms, which he bore with singular patience and resignation to the end, which came on 21st February, at his residence, No. 16 Lansdowne Crescent, closing a long and laborious life. He was the son of William Handyside, writer to the Signet in Edinburgh, and the late Lord Handyside, of the Edinburgh Bench, was his brother. Dr Handyside leaves a widow and three daughters, and many friends, to mourn his loss. By the many who have passed through the Edinburgh School of Medicine during the long period Dr Handyside was connected with it, and to whom he was a familiar presence in the lecture-room and at the hospital, he will be remembered with gratitude and respect.

We must not conclude this notice without referring to Dr Handyside's connexion with medical mission work in Edinburgh, in terms kindly supplied by an esteemed friend who saw much of him in this work. Dr Handyside was connected with the Medical Missionary Society from the first year of its existence, and his name has continued for forty years on the list of its committee or on the board of directors, in association with those of Dr Coldstream, Mr William Brown, Mr Benjamin Bell, Dr Robert Omond, Professor John Hutton Balfour, Rev. Mr Cullen, and others who took a warm interest in training young medical men for the mission field. Dr Handyside himself opened and conducted for some years a dispensary upon medical mission principles at the locality known as the Main Point, where the West Port and Lauriston diverge, where he was surrounded by a band of young men, including the students who were being educated under the auspices of the Medical Missionary Society. Much enthusiasm was felt and good work done, and Dr Handyside exercised a very wholesome moral and religious influence over not a few of these young men. After several years of this work the Medical Missionary Society arranged with Dr Handyside to take up the dispensary, which had been already transferred by him to No. 39 Cowgate, where, under the superintendence successively of Messrs Burns Thomson, David Paterson, and John Lowe, it has gradually and steadily developed into the now well-known "Livingstone Memorial Dispensary and Training Institution," of which Dr Handyside must therefore be regarded as the real originator. Of Dr Handyside's religious character generally it may be said that, while firmly holding to his own views, he was tolerant towards those who differed from his and always ready to forgive and forget,—indeed a perfect Christian gentleman, endeavouring according to his light to do his duty both towards God and man.

DR WILLIAM MACLAREN OF LASSWADE.

WHILE death has been lately busy among our old and respected teachers and practitioners, we have again to record with regret the loss of a young and active life before which many years of usefulness seemed to lie. Dr William Maclaren graduated in 1866, and immediately thereafter became house surgeon to Professor Spence for two terms. He then became assistant to his brother, Dr P. H Maclaren, who then was carrying on a very large and important practice in Lasswade and neighbourhood. After two years of work with him he went to Berlin and studied for a winter and summer session, returning to his brother in the capacity of junior partner, and eventually taking the whole practice when Dr P. H. Maclaren left Lasswade for Edinburgh. In August 1880 dyspeptic symptoms appeared, which were quickly followed by pain and emaciation, and he died on March 4, aged 34, of cancer of pylorus, missed and regretted by those who knew him

J. G. WILSON, M.D. GLASG., F.R.C.S.E. & F.F.P.S. GLASG.

WE regret to note the death, at the age of 51, of a well-known Glasgow physician, Dr J. G. Wilson. He succeeded while still young to his father's practice, which rapidly increased until it became one of the most extensive in Glasgow. He was for many years Professor of Midwifery in Anderson's College. Dr Wilson was highly esteemed in the profession, and his skill and experience in this department, to which he specially devoted himself, were generally acknowledged. His death took place very suddenly on the morning of the 4th March, just as he was about to go out to make his professional visits.

GEORGE ALEXANDER OTIS, M.D.

IT is with profound regret and a sense of loss, not only to his corps, but to the medical profession, that the death of George Alexander Otis, surgeon and brevet lieutenant-colonel, U.S. Army, is announced to the medical corps of the army.

Born at Boston, Massachusetts, November 12, 1830, he graduated with the degrees of A.B. and A.M. from Princeton College; entered the medical department of the University of Pennsylvania, and received his degree of M.D. from that institution in 1850; visited Europe, and prosecuted his studies in London and Paris, and returning to this country he established himself at Springfield, Massachusetts; appointed surgeon 27th Massachusetts Volunteers, September 1861, he held this position until appointed surgeon, U.S. Volunteers, 30th August 1864. After the close of the war he entered the Medical Corps, U.S. Army, as assistant-surgeon, February 28, 1866; became captain and assistant-surgeon, July 28, 1866; major and surgeon, March 17, 1880, having received the four brevets of lieutenant-colonel of volunteers, captain, major, and lieutenant-colonel, U.S. Army, for meritorious services during the war. While surgeon of the 27th Massachusetts Volunteers he served in Virginia, North and South Carolina, and was on special duty in charge of the hospital steamer "Cosmopolitan" in the department of the South. Assigned to duty in this office July 22, 1864, he was curator of the Army Medical Museum, and in charge of the division of surgical records until his death.

He was editor of the *Richmond Medical Journal* for three years, member of the leading medical societies of America, and corresponding member of various similar societies in Europe, and a contributor to prominent medical journals. The compilation of the surgical volumes of the *Medical and Surgical History of the War* has placed Surgeon Otis confessedly among the most prominent contributors to surgical history.

While on duty in this office Surgeon Otis wrote for publication no less than ten reports on subjects connected with military surgery, etc., among which are his most valuable and exhaustive reports on "Excision of the Head of the Femur for Gunshot Injury," and on "Amputation at the Hip-joint in Military Surgery." Of great culture, retentive memory, and with a remarkable facility of expression, he was, as a compiler and writer, conscientious in his analyses, giving his deductions from the facts before him with modesty, but decision. With such a record it is needless to speak of his zeal, his ambition, or his devotion to his profession, and especially to the reputation of the corps of which he was so bright an ornament. While devoting himself to the preparation of the third and last surgical volume (now more than half completed) of the *Medical and Surgical History of the War*, he died in this city, February 23, 1881. His untimely death will be deeply deplored, not only by the Medical Corps of the army, but by the whole medical profession at home and abroad.

JOS. K. BARNES, *Surgeon General.*

WAR DEPARTMENT,
WASHINGTON, *25th February* 1881.

CORRESPONDENCE.

REJOINDER TO DR GARSON'S LETTER TO THE EDITOR REGARDING THE REVIEW OF DR FANCOURT BARNES' TRANSLATION OF MARTIN'S ATLAS.

(*To the Editor of the Edinburgh Medical Journal.*)

IT is certainly, as Dr Garson says, an unusual step for an author to write an editor regarding a review of his own work. While such action may sometimes be excusable in the author, it is surely seldom warranted on the part of a person who has no concern with the book. We have already said it is an uninviting task to have to point out such glaring deficiencies as we found ourselves bound to do in the case of Dr Fancourt Barnes; but we fail to see that Dr Garson has mended matters by rushing into the arena and we hardly think that Dr Barnes will thank him for his proffered aid. In reply to Dr Garson's strictures, we emphatically assert that with the exception of the printer's error pointed out by him in our review, viz., "der artz" for "den Arzt," we are ready to adhere to every word contained in it, and can only explain Dr Garson's attempt to dispute our position by assuming that he is either ignorantly or wilfully blind on the subject. We further think that Dr Garson, when attempting to make two errors in syntax out of this trifle, ought to have put the spelling right, and not copied slavishly the misspelling. We maintain the correctness of our translation of the sentence from the preface referred to by Dr Garson, as also of the other given by us, but wisely omitted by him. "Fachwissenschaft" is translated by us, "the scientific knowledge of our *branch of the profession*," and not, as Dr Garson misquotes us, "of our profession." When the quotation is properly made, we fail to see how our view differs from Dr Garson's, except in perspicuity. In regard to "vielen," Dr Garson may not be incorrect, as we notice, on referring to the original, that it is followed by "anderwärts," but his observations respecting "einwärts gezogen" are utterly unwarranted, and clearly prove that Dr Garson does not even yet understand the subject illustrated by the plate. He is also glaringly at fault in his attempt to justify Dr Barnes for his haphazard translation of "umgebogene." The word is here employed to demonstrate that the anterior wall of the retroflected uterus represented in the plate is 2·7 centimeters longer than the *bent over* posterior wall. The laying open of the uterus is taken for granted, as in the two accompanying figures, where no reference is made to the mesial section. The surprise in this case should surely be at the folly of Dr Garson in maintaining a position so manifestly incorrect, and not at us for endeavouring to set the translator right when he is obviously wrong. But in his remarks upon "ziemlich" Dr Garson fairly outstrips himself in absurdity. He indulges in some utterly unintelligible and inconsequent observations about dictionaries and idioms in reference to a plain categorical sentence possessing no idiomatic character whatever, whilst he never once refers to the inadmissible meaning of "apparently" ascribed to the word by Dr Barnes, and to which we took exception. In Dr Garson's rambling remarks on this point, he appears to us to have lost sight entirely of the subject in question, and in his own translation he entirely omits the word, contenting himself with correctly translating "Kernreich," the meaning of which was never disputed. As to the extraordinary treatment of "in.," when employed as a contraction for "inauguralis," being a printer's error, internal evidence to the contrary is shown by Plate XXXIII. fig. 2, where Dr Barnes, in translating a title containing that contraction, either entirely omits it as meaningless to him, and

translates "de" as "on," or attaches that meaning to "in," omitting "de." Our etc. may be allowed to stand if Dr Garson would take the trouble to look at Plates XXIV. fig. 3, and XXXVII. fig. 6, where the same troublesome printer seems to have been at work. When he triumphantly asserts that the blunder as to "in." does not occur in one of the quoted instances, we recommend him to look well, and he *may* detect a blunder of a different kind in the Latin to which we referred in that instance, but which his Latin knowledge seems insufficient to enable him to detect without this broad hint from us.

While we distinctly disclaim all wish to say one unduly severe word regarding Dr Barnes's well-meant translation, we feel bound to affirm that a closer examination of the work only deepens our conviction of the justness of our previous remarks. But we refrain from pursuing this disagreeable theme further, as we think our readers cannot now fail to be convinced that this interference with free and legitimate criticism on Dr Garson's part is as ill-advised in the interests of his friend as it is unwarranted in regard to us.

THE REVIEWER.

(*To the Editor of the Edinburgh Medical Journal.*)

DEAR SIR,—Stimulated by the trenchant criticism of Dr Fancourt Barnes's translation of *Martin's Atlas* which appeared in your journal for February, and by Dr Garson's letter in your last issue, I have compared several passages in the two books, with what results you will find below. In the first place, I may say that, like the reviewer, I have found the task a "most uncongenial" one, and I have therefore limited myself to the first forty plates. As a result of the comparison, I entirely agree with the reviewer in his strictures on the book; and in regard to the instances he gives, I do not think that any one who examines them for himself will find that the reviewer has been far wrong. It is amusing to see that, in the passage where Dr Garson exaggerates what are evidently omissions in the correction of proof into "errors in syntax," he has repeated, without observing it, a false spelling of the word Arzt. Some of the faults pointed out in the review, and of which Dr Garson takes no account, are worth looking into. Dr Barnes's attempts to render "vergl." are called "comical;" but they are worse than that, for they often lead to complete misrenderings of the original. At Plate XXI., where the translation ought to be, "After Sömmering; compare Kilian's *Atlas of Midwifery*," Dr Barnes, by the omission of the word, leads us to understand that the plate is after Sömmering *in* Kilian's Atlas, whilst in the next plate he translates the same title as "accompanying Kilian's Atlas." Such mistakes greatly impair the value of the work. Dr Garson asserts that many of the corrections are mere quibbles arising from free translation, printer's errors, and slips of the pen; but, while not agreeing with him, we will say that plenty such are to be found throughout the book; nay, that there is hardly a page that is free from them. For example, the use of "left" for "right," mistakes in the printing of indicating letters, "Vesicular umbilicalis" for "Umbilical vesicle," "Retzen" for "Retgen," "Schültze" for "Schütze," the transposition of the titles of Figs. 5 and 6 in Plate XXXVII., "Surgery—Copper-plates," for "Surgical Copperplates," "Academy of Music" for "Academy of Medicine," etc. Fancy a memoir relating to Lupus of the Vulva being presented to the National Academy of Music ! ! !

As the reviewer points out, Dr Barnes has not been very successful in his rendering of contractions. In the preface, where "ff." occurs, he has let it stand, though meaningless in English. His favourite method, however, seems to have been to avoid the difficulty by complete omission; see Plates XXXI. and XL. In this latter the whole of the reference is missed out, presumably from inability to translate it, while in the next figure which is from the same work, Dr Barnes writes "op. cit."! The original reference is as follows:—"Nach E. Martin, *Beiträge z. Geb. u. Gyn. d. Gesellschaft f. Geb. zu Berlin*, Bd. I., S. 148."

If any one with a moderate knowledge of German will take the trouble to compare the original and the translation of the titles to the figures in Plates XXXVII., XXXVIII., XXXIX., he will be convinced of the haphazard manner in which Dr Fancourt Barnes has performed his work. In those three plates there are fifteen such titles. Seven—and these the simpler ones—may be allowed as correct, while eight contain errors in various degrees. For example, "Jungfrau" is translated "young woman," while its real meaning is virgin. At another place "Mädchen" is translated "virgin," a meaning totally outside the word. Another of the titles in the original is, "Einhörnige Gebärmutter aus der Leiche einer vor 6 bis 7 Tagen zum 10ten Male Entbundenen," etc. The translator gives for this, "One-horned uterus from the body of a woman from 6 to 7 days pregnant for the 10th time." It ought to be, "from the body of a woman between 6 and 7 days after her 10th confinement." Again, also in the same plate, "Aeusserlich einfache Gebärmutter mit Scheidewand bis in den Mutterhalskanal herab" is translated, "apparently simple uterus with vaginal wall continuous with cervical cavity;" while the meaning is, "uterus externally single, but with a septum extending down as far as the cervical canal." At Plate XXXVIII. the translator gives "uterus, divided from vagina," where it ought to be, "uterus divided by a septum,"—*i.e.*, with a septum dividing its cavity,—the similarity of Scheidewand to Sheidenwand having led him into the mistake. Now three such glaring inaccuracies occurring in two adjoining plates are surely enough to show the way in which the whole work has been done; and I hope that their exposure, along with the rest of this letter, may help to justify the reviewer and to save your journal from the accusations of secondrateness which Dr Garson makes.

I am, yours obediently,

J. MILNE CHAPMAN, M.B., M.R.C.S.

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THE BOSTON
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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Heart Starvation.* By J. MILNER FOTHERGILL, M.D. Edin., Senior Assistant Physician to the City of London Hospital for Diseases of the Chest (Victoria Park).

OUR knowledge of the valvular diseases of the heart is now very fairly good, but our acquaintance with the heart as "a muscle" has not kept pace therewith. In the diagnosis of valvular diseases we have a murmur to guide us, not infallibly true, as being pathognomonic of organic change, but terribly suggestive; and giving us the locality of the disease, the direction of the blood current, and with it the changes to be looked for as consequent thereupon; indeed, telling us the malady, the natural history and progress of which are now fairly known. But, in the absence of a murmur, the evidences of cardiac asthenia leave us on the edge of bog in gathering darkness: there may be solid ground somewhere, but above all there is the bog, giving a sense of impending danger. The weird figure of "fatty degeneration" looms up in the darkness, either a reality or conjured up by the imagination. It is the mystery surrounding "fatty degeneration," its occult beginnings, its insidious course, the absence of precise indications; all combine to create a terror of it both in the minds of medical men and of the laity. Few medical students, when reading up the diseases of the heart, have kept quite free from a haunting suspicion that there might be some fatty necrosis going on in the structure of their heart-walls. But further familiarity tells them, in articulate language, that fatty degeneration is a senile change essentially; that it is a disease of advanced life *par excellence*, though sometimes found in comparatively early years. There is premature old age in the heart-walls as well as elsewhere. It must be admitted that pericarditis, glueing the pericardium down over the coronary vessels, may lead to early decay in the heart-walls, or the pressure of a syphilitic gumma may produce the same result. An atheromatous tubercle blocking one or other coronary artery, may also lead to insidious necrosis of the muscular fibrillæ. But, as ordinarily met with, this fatty degeneration is the concomitant of atheroma; where the lumen of the coronary vessels is diminished, where the arteries themselves are tortuous, and consequently the blood current in them impaired and impeded: and where the aortic coats are affected and have lost much of their elasticity, and consequently the aortic rebound, the propelling force of the blood current into the coronary arteries, is lessened. With these arterial changes we find "the gouty heart;" first hypertrophied, and then, as its nutrition is interfered with, structurally impaired. Such, then, is the "natural history of the fatty heart." Its aspect is that of "old age"—physiological, if not always chronological old age. Here there is the doubtful, hesitating, uncertain step; the general infirmity of age. This is closely simulated by the muscular asthenia, the general debility of severe illness with impaired nutrition, found in younger persons. The general outline is the same; but one is a young person much debilitated, the other is a person unmistakably senile. The resemblance is diminished by scrutiny; careful observation demonstrates that the resemblance is more apparent than real. So with "fatty degeneration of the heart" and its double, "heart starvation;" the resemblance is greatest at first sight, and disappears on attentive scrutiny. A tottering old man, the subject of extensive senile changes, and a young or middle-aged man brought down by dysentery, may hardly be distinguishable at some distance or to a casual glance; but, when seen closer, the resemblance fades away as the points of difference become more distinct. So it is with "fatty degeneration" and its double, "heart starvation."

We see epilepsy associated with a certain instability in the cortical cells of the motor area; we find it the outcome of hopeless structural changes. Yet the features of the epilepsy are much the same. We see a man stagger from drink, or from actual disease in the pons, or cerebellum. The mere act of staggering tells little. So with the evidences of cardiac asthenia; they tell us the heart is weak, but they do not instruct us as to the why of the cardiac feebleness. Our diagnosis, then, is not cleared up by mere physical examination, nor even by the subjective phenomena, since these are the same; but by the associations of the enfeebled heart. It must be decided by the state of the individual, not by that of the heart; since this last is identical—identical so far as any human means, in the present state of our knowledge, can discern. Ordinary physical examination is dumb as to the means of discrimination. Where there is asthenia of the heart in a person carrying the senile aspect of the "fatty heart," it is impossible to be certain about the diagnosis; and it is better to err (if err we must) on the safe side, and not to underestimate the gravity of a case; albeit that in doing so we add to the sum total of avoidable human misery by our error in a certain percentage of cases. If some cases carry with them a better prognosis than the symptoms seem to warrant, let patient and practitioner be thankful. Possibly some cases of aortic dilatation and aneurysm carry with them a less grave prognosis than the one usually given, namely, a hopelessly downward course; and diminution of the blood-pressure upon the internal surface of the sac leads to much recovery in the elastic arterial wall; but because this occurs in some cases caught at an early period and subjected to appropriate treatment, we are not warranted in looking upon either condition as being anything but very grave and serious. When the fortunate case does occur, it is to be regarded as just cause for rejoicing.

So in cardiac asthenia; only here the error of regarding "heart starvation" as "fatty degeneration" is one more often made than is quite creditable to the profession; for the difficulties of differentiation are not insuperably great in the bulk of cases. George Balfour wrote in 1876:—"The time is rapidly approaching when the knowledge of medical physics shall be so widespread as effectually to eliminate mere opinion, at least, from the diagnosis of diseases of the heart, an organ the condition of which we can ascertain in so many different ways, that with sufficient care we can almost be as certain of the state of its orifices, at least, during life as if we had it on the dissecting-table." Yes; certainly Dr Balfour is nearly, if not quite right about "the state of its orifices, at least;" but about the state of its muscular walls we, *i.e.*, the profession generally, are, and rightly so, much less confident. It is a far more difficult matter to ascertain, requiring a wider range of information. Sometimes accurate acquaintance with physiological function will tell us more than mere anatomically-furnished data, will often, indeed, speak out articulately when anatomical data are dumb. Disturbances of function cannot be estimated by individuals who have not learned systematically to think for themselves; whilst a fourth year student will commonly make a very accurate diagnosis when this depends upon mere acute observation of physical signs. A certain familiarity with a foreign language is admitted to be requisite in order to enable the individual to think in it; a certain intimacy with physiology is essential to accurate reasoning upon data founded upon such knowledge.

This is a somewhat lengthy preamble, but it throws a quantity of side-light, not without its value, upon the subject of "heart starvation."

There are many conditions where "interstitial digestion" or "tissue nutrition" is impaired. We see at times a person whose muscles are well fed, but who is lean. Such is the condition of a man trained for some contest involving endurance; there is a maximum of muscle with a minimum of fat. Then at other times we see a man whose muscles are flabby, but who is well covered with fat. Here there is an opposite condition of nutrition, viz., a want of assimilation of albumenoids. A muscle well exercised attracts to itself more pabulum, as in the arm of the blacksmith and the leg of the ballet-dancer. Yes; so long as the blood is well fed and contains a sufficiency of albumen upon which the muscles, in their turn, may feed. But when a muscle is used very freely when the nutrition is defective, it wastes, or undergoes atrophy, as T. King Chambers has pointed out (*Clinical Lectures*). So, when the digestion of albumenoids is impaired, the two great muscles, the heart and diaphragm, in constant action, become more or less starved. This is very apt to occur when the liver is disordered seriously, so that the peptonized albumenoids which have passed from the gastro-intestinal canal into the blood, do not properly undergo their further and final transformations. A number of cases have occurred to me lately which have shown this association of liver disorder with enlargement and debility in the cardiac walls—a debility against which digitalis and iron are simply impotent. All know (well, or ought to know) that when the liver is disordered the administration of iron never succeeds—often, indeed, makes matters worse. When the liver is put in order, then the tissue nutrition is improved, and the heart-walls become once more of normal power, and the symptoms of cardiac asthenia are relieved. Of the accuracy of the clinical phenomena there can be no question; whether the explanation is equally well founded is a matter upon which opinions may differ somewhat.

No one who has made the subject of digestion a matter of careful study can dispute the fact that the digestion of starch, albumenoids, and fats, is not always in strict proportion to each other; invariable and unvarying. It is not at all uncommon to find an unfilled artery in a corpulent person, even more often in a person well nourished, and therewith evidences of an anæmic brain, and breathlessness on exertion; and, further, with a deposit in the urine, most marked after meals, pale stools, and a foul taste in the mornings—the evidences of hepatic disturbance. At least I frequently see such cases. There may be actual enlargement of the liver, but at other times the viscus is of normal size. We do not yet know much of the liver in its early derangements, for they are not lethal; perhaps the disturbance does not produce any morbid change that can be detected by the microscope, even. Anyhow, we can only recognise disturbance of function. This is confined to the metabolism of albumenoids. Beyond difficulty in their actual digestion, hydrocarbons—starch, sugar, and fat—give us little or no trouble; but it is far different with the albumenoid elements of our food. From the time, as soluble peptones, they pass from the digestive tract into the blood, until the time of their reappearance as bile acids, and urine solids, their history is that of an underground river—we know it is somewhere; but its whereabouts is veiled from us.

The albumenoids give positive evidence of disturbance produced in their metabolism within the system by their actual presence, either as morbid products or natural products in excess—that chain of symptoms which are classed under indigestion, biliousness, or gout, as the case may be. Often there are evidences of arterial anæmia, and, blended therewith, actual toxæmia from the products of disordered digestion, or normal nitrogenized waste in excess. That such is the case is proved by the fact of the disappearance both of the evidences of anæmia and of toxæmia together, when the liver is attended to rationally. The rational treatment is (1) to reduce the work of the liver by a dietary containing albumenoids in sparing quantities, and in easily digestible form; and (2) to sweep away the nitrogenized waste, and so cleanse the blood. A little proteid food well and thoroughly digested, gives more tissue pabulum than a meal rich in albumenoids; none of which are thoroughly and completely digested. Consequently upon such a dietary the tissues are actually better fed, better nourished; while there is a minimum of nitrogenized waste to be got rid of. Upon a dietary rich in albumenoids there is a maximum of waste, deleterious as well as useless, without tissue nutrition. This waste in the blood often raises the blood pressure in the arteries, and so offers an abnormal resistance to the ventricular systole: sweep away the waste, prevent its further accumulation, and an asthenic ventricle recovers itself. Such is the rightful treatment of many a feeble heart-wall which remains unaffected by digitalis and iron, with a liberal dietary rich in albumenoids if, indeed, it does not grow actually worse under such management.

The following case is to the point:—

The Rev. Mr S. consulted me with his medical attendant, Mr Webster of Bristol, on May 22d, 1880. He had for seven preceding months been under the care of one of the most eminent members of the profession in town, without avail. He had a mitral regurgitant murmur, a dilated left ventricle, an enlarged liver, pale stools, and a deposit in his urine. He was debarred from work by asthenia and inability to exert himself. He had been well fed, and taken digitalis, strychnia, and iron, without any improvement. I looked upon it as a case where the assimilation of albumenoids was impaired, so he was put upon a diet containing little albumenoid material; while twice a week he was purged with a mercurial pill at night and a saline purgative next morning, to cleanse the blood of its nitrogenized waste. He was enjoined perfect rest, in order to ease the work of the heart. He had a little pot. brom. and digitalis to relieve the palpitation. On June the 16th the report is, "The liver is decidedly improved, and more bile is secreted, and less lithates in the water; his pulse feels more vigorous, and there is a fair approach to something like rhythm in it." On July 16th he was "very much improved indeed. Heart steadier; murmur scarcely audible; liver much less."

Since then I have only had reports of him. On December 20th "he was looking remarkably well and happy. So far he has made a most marvellous recovery since he has been under your treatment. He has carried out your dietetic instructions almost to the letter, and the result has been most satisfactory. The condition of the heart is most decidedly improved; it flutters less, and gives him very little trouble at night-time."

The latest account from his medical attendant, April 6th, says,

—"Our patient is now progressing most favourably; you have done wonders for him. The heart-sounds are decidedly clearer, and the rhythm more natural—more power altogether, and he looks better and is in good spirits."

If this case stood alone it would carry comparatively little weight with it. Another runs as follows:—

E. W., æt. 52, had also been under medical care some time without result, except getting worse. His pulse was 120 and irregular, and there was cardiac dilatation. His respirations were 24 when quiet. His liver was decidedly enlarged. His appetite was bad, but there were lithates in his water. There was distinct dropsy in both legs up to the knees. He was put upon an identical plan of treatment, except am. carb. for pot. brom., with a little digitalis. By December 31st he ate well, slept well, had no nocturnal dyspnœa; heart's action nearly regular; dropsy quite gone. His recovery has gone on unimpaired, and he presents the appearance of a perfectly healthy man. His complaint is this; "I cannot take a four mile walk, which I ought to be able to do," he writes.

In both these cases the improvement in the liver led to better assimilation of albumenoids, and consequent better tissue nutrition; and the heart and diaphragm both improved thereby, and were functionally stronger. With this improved nutrition the evidences of asthenia, the dyspnœa and palpitation on effort, both disappeared.

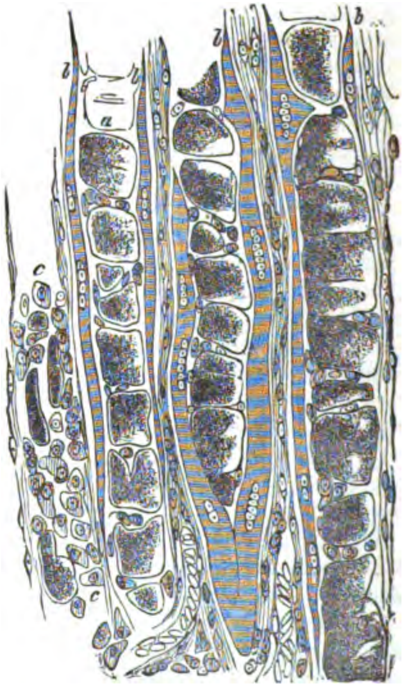
On March 23d this year Dr Macintosh of the Brompton Road asked me to see with him a stout man, weighing over 18 stone, who had had a very severe attack of pleurisy. When lying quiet in bed he was well and quite easy. As soon as he got up he suffered acute pain, especially at the insertion of the diaphragm. He had a foul tongue and an enlarged liver. He was dieted and purged at intervals, and had some am. carb., digitalis, and nux vomica. When seated in a chair, and leaning his arms upon the back of another chair—a favourite attitude with persons with confirmed heart disease, so as to take off the weight of the head and shoulders—he was fairly comfortable. Here, again, there was muscular asthenia, the result of impaired assimilation of albumenoids. The keen east wind, which produced so sadly potent an effect on the Earl of Beaconsfield, has affected this patient's liver and retarded his progress.

This recognition of cardiac asthenia as the result of malnutrition is no new matter. Thirteen years ago I attended an old gentleman for a series of symptoms pointing to fatty degeneration of the heart. The first sound was very feeble, and he had all the subjective phenomena of a fatty heart. With rest, proper food, and some digitalis, he improved. Instead of the feeble heart, he developed a fairly hypertrophied heart-wall, with a distinct obstructive aortic murmur. This heart was "starved" rather than "fatty." He enjoyed several years of very fair health after this. It is only recently, however, that the subject has forced itself upon my attention in its full panoply of symptoms and associations; and still more as to the most rapid and effective means of treating it successfully.

It is now time to review the symptoms and signs of "heart starvation," contrasting them with those of "fatty degeneration."

In his recent edition of his excellent work on *Medical Diagnosis*, my friend Dr Da Costa of Philadelphia writes of "fatty degeneration of the heart" so:—"Our power to recognise the change during life has not kept pace with our power to recognise it after death. There is as yet no sign discovered by which we can positively say that the dangerous disorganization of the muscular fibres of the heart is in progress. We may, however, suspect it if the signs of weak action of the heart—feeble impulse and ill-defined sounds—coexist with oppression, with a tendency to coldness of the extremities, with a pulse permanently slow or permanently frequent and irregular, and be met with in a person who is the subject of gout, or of a wasting disease, or is very intemperate, or has arrived at a time of life at which all the organs are prone to decay." So far the description will meet "heart starvation" from a long debauch without eating, or a wasting disease; just as well as "fatty degeneration." He proceeds—"Something more than a suspicion is warranted if, in addition, there be proof of atheromatous change in the vessels, or of fatty degeneration elsewhere, such as an arcus senilis, or if it be ascertained that the patient suffers from pain across the upper part of the sternum, and from paroxysms of severe pain at the heart; that he sighs frequently; that he is put easily out of breath; that his skin has a yellow, greasy look; that he is subject to syncope or to seizures, during which his respirations seem to come to a standstill; and that he is liable to vertigo, or to be stricken down with repeated attacks having the character of apoplexy, save that they are not followed by paralysis." Here we see that the aspect of "fatty degeneration" is distinctly "senile." There are evidences of senile degeneration elsewhere; especially the atheromatous arteries—the natural concomitants of the fatty heart.

What there is in common with "heart starvation" is the feeble circulation, the cold extremities, the tendency to vertigo, the "attacks having the character of apoplexy, save that they are not followed by paralysis." On March 17th last year I saw a lady lying on her bed unconscious and motionless, as she had lain for hours, and who lay there several more hours without alteration. Her ordinary medical attendant had kindly left a wooden boxful of leeches for my use. Knowing that she was worn out by long waiting upon a sister very ill, I distrusted the apoplexy view thoroughly, and shouted loudly at her. She opened her eyes, mentioned my name quite clearly, and then relapsed into her apoplectic state. Next day she got all right, except some cerebral confusion, and is now perfectly well. It was a case of "acute cerebral anæmia." Such attacks are not, then, confined to fatty degeneration of the heart. The other signs of degeneration, as an arcus senilis (Dr Da Costa pays myself the compliment of first describing the "true" as compared to the "false arcus senilis") and a degenerate skin, are most important as factors in the diagnosis. But it must not be forgotten that "heart starvation" may show itself in a case where senile changes are undoubtedly present; where there may be possibly some degeneration of a proportion of the fibrillæ of the heart-walls, as in a case about to be related presently. There is no inherent impossibility of such coincidence. Beyond the matter of mere "heart starvation" lies that of the repair of degenerate heart-fibres, as given in a plate in my work on *The Heart and its Diseases, with their Treatment: including the Gouty Heart,* taken from Rindfleisch's well-known work on *Pathology* translated by the New Sydenham Society.



Acute Degeneration of the Heart (from Rindfleisch).

Here we see heart-fibres actually fattily degenerate after acute fever. We also see developing worm-like fusiform, or spindle-shaped fibres within the sarcolemma, growing up from embryonic nuclei; and taking the place of the worn-out effete old fibres. This is a most instructive woodcut. It tells us that repair does go on in a deayed heart, when not due to such occlusion of the vessels as cuts down he blood-supply of a heart below the point of sufficient nutriion of the whole of the fibrillæ. It is this change in the coronary rteries found usually with the fatty heart which gives it its grave rognosis; because it forbids the possibility of repair. When the loodvessels are not occluded, or not too far occluded, there exists o *a priori* reason against repair of the heart-walls by development f the embryonic muscular fibres already existing within the sarcoemma. It makes, indeed, the condition of the arteries the test for he gravity of the prognosis; as it rightfully is, and should be made. It is the extent of arterial change, rather than the information furnished by the stethoscope, which must tell us whether we have "fatty degeneration" or "heart starvation" to deal with; or, in some instances, probably both. Certain it is that we are not justified in regarding all cases of fatty degeneration—or, at least, what may fairly be termed "fatty degeneration"—as involving the hopeless prognosis which is correct and justifiable enough when there is advanced atheromatous disease of the arteries. To do so is to fall into the too common error of attributing to all affections of the heart, indiscriminately, the grave prognosis which properly attaches only to the cases where molecular decay is extensive and advancing. In an article in this Journal, February 1878, entitled "Some Conditions which simulate Organic Disease of the Heart," I pointed out several conditions which closely resemble organic changes. It is unnecessary to refer to them here. In one case the absence of impulse and the indistinctness of the heart-sounds had led the medical men into an error, which they readily enough acknowledged when Clifford Allbutt, F.R.S., pointed it out to them. Here too exclusive reliance upon the testimony furnished by the stethoscope alone led them astray. Very often careful examination of the radial pulse will correct an erroneous estimate formed from the character of the heart-sounds.

Now, as to the symptoms of dyspnœa, or breathlessness, often found in actual fatty degeneration of the heart. In the consideration of this symptom it seems surprising that more attention has not been paid to the diaphragm. The most important muscle in the body, next to the heart, it seems to have escaped attention alike in the hospital ward and in the dead-house. Yet it must be subject to the conditions which control the nutrition of muscles. The same arterial degeneration which involves the heart-fibres must implicate the nutrition of the diaphragm in the tissue-wreck it works. So also in "heart starvation" the mal-assimilation of albumenoids must impair the functional activity of the diaphragm, and render it unequal to a sudden demand. So we get breathlessness upon effort, with frequent sighing. There is, too, a tendency to faintness, and attacks where the respiration seems to come to a standstill. Quite commonly there are attacks of nocturnal dyspnœa coming on in deep sleep. We know that in sleep the respiration becomes slow and deep. If the lowering of the activity of the nervous centres of the respiration, in the medulla, passes beyond a certain point, the blood becomes surcharged with carbonic acid, the natural stimulus to these said centres; and then these centres are roused to powerful and rapid discharges, which throw the respiratory muscles generally, the ordinary and also the extraordinary into violent action. These vigorous respiratory efforts soon restore the blood to its normal state, by getting rid of the surplus carbonic acid; and then the usual quiet breathing is regained. Such is the history of an ordinary attack of nocturnal dyspnœa. When the circulatory organs are impaired and lacking in power, such attacks are rendered more likely to happen. When both heart and diaphragm are "starved," such attacks are found; just as in fatty necrosis of the fibrillæ of these two muscles. These attacks are of comparatively short duration contrasted with the true cardiac asthenia of over-distention of the right ventricle. The first cease naturally when the blood becomes purified and freed from the excess of carbonic acid, which excites the violent respiratory efforts; the latter, depending upon over-distention (the secondary elongation of Carpenter) of muscular fibre, require a longer period before they pass away. It is desirable to differentiate these two forms of nocturnal dyspnœa; as they belong to different conditions; and require each their appropriate treatment. The dyspnœa of failure of the respiratory centres is common in chronic Bright's disease. Such, then, are the lineaments of "heart starvation" which bear a strong resemblance to those of "fatty degeneration;" just as the features in serious syncope resemble those of a corpse in the first hours of death.

But "heart starvation" is not always associated causally with impaired tissue-nutrition, due to imperfect assimilation of albumenoids, with liver disturbance. It is found where there has been a great deficiency of sleep for some time. In some instances the cardiac asthenia takes the direction of dilatation. For instance, rather more than a year ago I was called in to see a woman of 40, of magnificent physique and unexceptionable family history; her father was alive and out, her mother an active old body of 80, who was bustling about, waiting upon her sick daughter. Here there was acute dilatation from over-exertion, want of sleep, and want of proper food. The patient was a nurse in a family where there were a number of children, to whom she was much attached. One after another they had scarlatina, and, almost single-handed, she nursed them day and night. When the last one was convalescent she broke down, exhausted with her efforts; prostration in bed, with a dilated heart, was the outcome of her devotion. Such acute dilatation as the result of over-exertion, especially when combined with insufficiency of sleep and comparatively little or no food, has long been familiar to me. It is one form of "heart starvation;" that form in which I have chiefly seen it in women. I have an impression, but will not put it more strongly, that exertion, over-effort, is an essential factor in the dilatation. Without such effort, in form and size the heart remains unaltered.

In 1874 I saw a gentleman, over 50 years of age, who was scant of breath on exertion, and who had a feeble radial pulse; and where the heart's sounds were very indistinct, while the impulse was lost altogether, partly from the dense chest-wall. He was a man of massive physique, but very gray for his years. He had been told that he was the subject of fatty degeneration of the heart by one of the most eminent of our authorities on the subject. He was taking much too little sleep; and longer hours of rest soon restored him to perfect health. Some years afterwards I saw him, and he was well and vigorous. Such cases are not very rare, and crop up from time to time.

Diagnosis.—The diagnosis of "heart starvation" is made by its concomitants, differentiating it from "fatty degeneration." It is made by the grouping of the symptoms. Hayden justly says of the fatty heart, "The symptoms indicative of a fatty condition of the heart are individually of little value; but, combined in groups, they assume an affirmative significance." So it is with "heart starvation;" always bearing in mind that "fatty degeneration" is a senile change, while "heart starvation" is a malady of earlier life: admitting that fatty degeneration may occur in rare instances in early life, and heart starvation be found in advanced life with the associations of the fatty heart—indeed, may occur in the sound fibrillæ of a heart already commencing to decay by fatty necrosis. The condition of the arteries is the most trustworthy guide in making the diagnosis, of any one individual factor.

There is, however, one condition of the heart which may easily be confounded with "heart starvation," and that is "the irritable heart." Indeed, I am myself in error in grouping these cases together in the second edition of my work on the *Diseases of the Heart;* being carried away from the correcter subdivisions of the first edition by a series of cases of the irritable heart where muscular asthenia was a prominent symptom. Certainly they have many features in common, and in some cases it is impossible to say which is the greater half—the nervous irritability or the muscular adynamy. Some cases may be classed under either heading, and it is quite optional which shall be chosen. But they are obviously cases of heart disorder rather than heart disease—*i.e.*, there is no organic structural change, irreparable and irremediable. In the irritable heart there is a history of ever-exertion with mental tension, leading to a neurosal condition. The action is notably increased beyond the normal on rising from the recumbent posture; it is quickened by emotion, and found mostly along with other evidences of the neurosal temperament. The distinction of the two has not quite escaped me, for I see it is written, "The effects of treatment will often help to clear up the case when the nature of it is obscure. Mere muscular failure in comparatively young and fairly well nourished persons, will be found usually to yield readily to rest, digitalis, and hæmatics; while the irritable heart improves but slowly." But further experience tells me that the class of cases which lie outside the "usually" are those where there is mal-assimilation of albumenoids and disordered function of the liver. Thus the special appropriate treatment must precede the iron and hæmatics (p. 399).

Prognosis.—This is a very grave matter, and needs much pains in its adjustment. On it hangs the future of the patient as a working member of society—perhaps the prospects of his wife and children. In the unmistakably fatty heart the outlook is dark, as dark as the oncome of night in a freshening south-western rain-storm. In heart starvation it is bright both as to result and as to time. It is in this last matter that it becomes so important to discriminate "heart starvation" from "the irritable heart," or to appraise correctly the proportions of the different factors when blended. Where the neurosal element is distinctly present, then the prognosis as to time is darkened. All neuroses possess an element of intractability. When there is the neurosal element distinct, the prognosis as to time is worse than when there is merely muscular asthenia from defective tissue nutrition. I may again quote in illustration thereof what is written elsewhere: "As to the prognosis, where the case was due to exhaustion of the sympathetic by hard marching and prolonged excitement, it was generally fairly amenable to treatment, especially when rest was attainable. But in other cases, where the disease assumed the character of a neurosis, the prognosis approached rather that of Graves's disease, and the case was intractable" (p. 390). Such was Da Costa's experience; such has been my own.

In both "heart starvation" and in the truly "fatty heart" there is a liability to attacks of angina pectoris vaso-motoria, *i.e.*, arterial spasm, when the blood is surcharged with nitrogenized waste. The prognosis of such attacks is in direct proportion to the extent of the fatty necrosis present.

Treatment.—This is a very important matter indeed, as correct treatment can alone enable the case to take the direction of restoration of functional power, by repair of the starved muscular fibrillæ. Digitalis and iron given indiscriminately will before long bring the treatment of heart-disease into disrepute; yet how the bulk of medical practitioners are to be induced to study the features of each individual case, and to lay down a plan of treatment adapted to the requirements of each case? I confess it is not easy to see. The pressure on their time in large practice militates against such patient thought; and these cases are not common enough to make them quite familiar with the subject. It is necessary to remember first, that when the tongue is not clean, and the function of the liver is disordered, it is worse than useless to give iron (see "When not to give Iron," *Practitioner's Hand-*

book of Treatment, 2d edition). The liver and the assimilative processes must first be put to right, and then chalybeates may be given—but not before. As to medicines, it may be well to give a pill, the old-fashioned dinner pill, containing ipecacuan with a vegetable laxative. Ipecacuan is an hepatic stimulant of no mean potency; or iridin, or euonymin may be substituted. Then a little strychnia or digitalis may be added, according to the indications of the case. Twice a week, first thing in the morning, it may be well to give a dose of sulphate of soda with Rochelle salts, to sweep away a quantity of waste by the bowels, especially bile surplusage. This is the medicinal part of the subject. Now comes the dietary. A small quantity of albumenoids thoroughly digested furnishes more pabulum to the tissues, more material from which the tissues can be fed, than will a large meal, of which none or very little is completely digested. The tissues may be starved when the stomach is filled to repletion with food rich in albumenoid material. The food should consist of fish, fruits, fat, and farinaceous material — such dishes, indeed, as are given in *Food for the Invalid;* where a variety of suitable culinary receipts will be found. On such a dietary it will be seen that the patient gains weight as the nutrition of the tissues is improved. It is well, too, to aid the natural digestive efforts by giving pepsin or the liquor pancreaticus advocated by Wm. Roberts in his recent *Lumleian Lectures.* After a certain improvement has actually taken place it may be well to proceed to administer chalybeates. The following case illustrates what may be attained by appropriate well-selected treatment even in a very unpromising condition.

Mr A., only 48, but looking much older, and presenting a decided arcus senilis, consulted the late Dr Murchison some three years ago, who then said there was nothing organically wrong with the heart. When seen by me last autumn he complained of dyspnœa on effort, and at times without it; including attacks which came on at night in his sleep. He could not walk upstairs even slowly without breathlessness, extending to a paroxysm of dyspnœa if the greatest circumspection was not practised. There was decided cardiac dilatation, with irregularity, increased by effort. There were crops of petechiæ, indicating vaso-motor enfeeblement. There was much restlessness from the embarrassment of the respiration. The case seemed one of failure from fatty degeneration of the heart-walls. He was placed on the line of treatment given above. In a month he was calmer and quieter. The night attacks of dyspnœa had disappeared; but the breathlessness was easily induced by exertion or mental annoyance. Then he returned to work, but grew worse; so he reduced the work, and again improved. A few weeks later the pulse was regular, the dyspnœa gone, and he could walk upstairs without inducing it. The appearance generally was much improved. He now had a little iron, with strychnia and digitalis in pil. alet. myrrh., with a little sulphate of soda and Rochelle salts in the morning once a week. The improvement went on steadily. When last seen he admitted having walked for considerable distances, and having "been upon his feet for two hours at a stretch without fatigue or discomfort;" while his wife said "he has been cutting up and down the steps of the Metropolitan Railway stations without complaint."

The progress of this case is most instructive. The evidences of cardiac asthenia are passing away; albeit that the general aspect of the case was that of the fatty heart. The heart-sounds are clearer and louder, the impulse better, along with the general improvement. Indeed, it looks as if there were new fibrillæ developing within the sarcolemma, taking the place of old effete fibres, and bringing with them an increment of power. The improved tissue nutrition is such that the diagnosis was doubtful, though it was also held by the eminent medical men under whom he had been before placing himself under my care: the reason assigned for coming to me being that they "lacked decision" in their measures. Probably the case is one where actual fatty degeneration of some of the fibrillæ of the heart was blended with mal-nutrition of the fibres remaining structurally intact. Certain it is that where there are distinct evidences of mal-assimilation of albumenoids it is well to treat decisively a case which even carries the broad lineaments of fatty degeneration—not to give it up in hopeless despair of doing any good. To do this is certainly to confirm the dark prognosis. But in order to secure all the improvement potentially possible in such cases of tissue-deterioration we must be familiar with what physiology is teaching us about the feeding of the body, the digestion of the various elements of our body, the function of the liver in relation to albumenoids; as well as the means of acting upon the liver, so much elucidated by recent physiological research. Physiology must guide our practice in the future. Anatomical or mere histological research has apparently told us all it has got to say. When it can lead to such an opinion as this,—"The fatal forms of progressive anæmia, to which hitherto no satisfactory cause has been assigned, are due to atrophy of the gastric glands,"—it is high time to critically examine its utterances. This state of atrophy of the gastric tubules may be found after death. But is it not the result, rather the cause, of the pernicious anæmia—a case of getting the cart before the horse? Such an hypothesis ignores the trypsin of the pancreas as a digester of albumenoids; and is monstrously improbable on the face of it. If the digestion of our food is still to be made to rest so exclusively upon the stomach, our progress is blocked, or at least gravely impeded. Sounder, truer, more exact impressions of the digestive act are essential to a better acquaintance with the subject of tissue-nutrition and its disturbances, of which "heart starvation" is a part.

N.B.—A condition of very acute asthenia in the heart, induced partly by starvation, partly by failure of nerve-force, is seen in certain cases of blood-poisoning with or without an exanthem; it is fraught with intense danger to life.

ARTICLE II.—*Report of the Royal Maternity and Simpson Memorial Hospital for the Quarter ending 31st October* 1880. By J. HALLIDAY CROOM, M.B., F.R.C.P.E., Ordinary Physician to the Hospital.

I HAVE to report that during my term of duty, ending 31st October 1880, 55 women were delivered in the Hospital. Of these 26 were primiparæ, 29 multiparæ. Average age of primiparæ was 22 years, of multiparæ 28 years. 55 children were born—34 males, 21 females. The primiparæ gave birth to 16 males and 10 females; the multiparæ gave birth to 18 males and 11 females. Duration of labour in primiparæ: 1st stage, 10 hours 50 minutes; 2d stage, 2 hours 37 minutes; 3d stage, 11 minutes. Average duration of entire labours, 13 hours 39 minutes. Duration of labour in multiparæ: 1st stage, 8 hours 10 minutes; 2d stage, 1 hour 48 minutes; 3d stage, 12¼ minutes. Average duration of entire labour, 9 hours 42 minutes. Of the presentation and position, 50 (or 90 per cent.) were vertex, arranged thus: L.O.A., 40 = 72 per cent.; R.O.P., 8 = 14 per cent.; R.O.A., 2 = 3 per cent.; L.O.P., 0. There were 5 preternatural, as follows:—2 breech cases: L.S.A., 1; R.S.P., 1: 2 footling cases. In one premature case the dorsum of fœtus presented.

Instrumental Labours.—Forceps were applied 10 times, *i.e.*, 1 in 6. The following is a short record of each case:—

Low Forceps Cases.—1. Primipara. Vertex, L.O.A. Head, after full dilatation of os and rupture of membranes, with strong pains, was delayed on floor of the pelvis for 4 hours. Slight perineal tear. Fœtus alive. Mother well.

2. Primipara. L.O.A. Weak, anæmic patient; exhausted by protracted 1st stage (25 hours). Had inertia in 2d stage for 4 hours. Slight perineal tear by shoulders. Fœtus alive. Mother well.

3. Multipara. L.O.A. 1st stage, 20 hours; 2d stage, 6¾ hours; during last 3 inertia. Slight tear of fourchette. Fœtus alive. Mother well.

4. Primipara. L.O.A. 1st stage, 9½ hours. Head rapidly descended to floor, and remained there for 3 hours. Very rigid external parts. Fœtus alive. Mother well.

5. Primipara. Owing to the sudden development and rapid spread of emphysema, forceps were applied. Fœtus alive. Mother well.

6. Multipara. R.O.P. 2d stage, 5½ hours. Arms under chin, causing extension and delay. Fœtus alive. Mother well.

7. Primipara. L.O.A. 1st stage, 8 hours; 2d stage, 4½ hours. Rigid perinæum and ostium vaginæ. Fœtus alive. Mother well.

High Forceps cases:—There were three.

1. Primipara. L.O.A. Head delayed at brim for 6½ hours in

2d stage owing to a contracted brim. C.D. 3½. A. R. Simpson's traction forceps applied, and delivery effected with ease and rapidity. Fœtus alive. Mother well.

2. Primipara. R.O.A. Slight contraction at brim. Occiput hitched at brim, and delayed, after rupture of membranes and dilatation of os, for 3 hours. Fœtus alive. Mother well.

3. Multipara. L.O.A. Head at brim in 2d stage for 7½ hours, owing to obliquity of uterus, with passages hot and dry. Fœtus alive. Mother well.

Mortality.—Maternal, 2 septicæmia. Fœtal, 6 still born, all of which were putrid. Infantile, 4: 1 overlaying, 1 hydrocephalus and spina bifida, 1 hæmorrhage from cord, 1 prematurity of birth. All the breech and forceps cases lived.

Puerperium.—In 46 women the puerperium was absolutely uncomplicated. In 7 there was slight and inconsiderable increase of pulse and temperature. In 1 case cystitis and perinephric abscess was developed. There was 1 case of parametritis. 1 patient suffered from albuminuria with uræmic coma. Two women succumbed to septicæmia, one of whom was delivered during the previous term, and had in addition a phlegmasia dolens.

The following two cases are deserving of special record.

Case of Emphysema. — Isabella Stewart, aged 22, primipara. Patient was admitted on the evening of 11th October, having had some few irregular pains during the day. At about 1 A.M. on the morning of the 12th labour began. The pains, being frequent and feeble, continued during the day, the os dilating very slowly. Three twenty-grain doses of chloral hydrate were administered during the day on account of the rigidity of the os, and at 8 P.M., and again at 9 P.M., one grain of opium was given. Shortly after this the os was about the size of a five-shilling piece and rigid, the head lying transversely, with the occiput to the left. The os continued slowly to dilate, the pains being still somewhat feeble, until 7 A.M. on the 13th, when, the os being fully dilated, the membranes were ruptured, the head now lying in the right oblique, with the occiput anterior. The pains now became more severe, and by 8.30 A.M. the head was on the perinæum, attempting with each pain to emerge, receding during the intervals. This state of matters continued till 9.50, when the right eyelid of the patient was observed to swell very rapidly, and in a few minutes the right eye was completely closed by the puffiness of the eyelid. The swelling meantime was observed over the right side of the face, head, and neck, being especially marked in the supra-clavicular region and under the jaw. Soon it was observed on the left side and in the same locality, but less marked. Below the clavicle the swelling extended to the level of the third rib. All over this swelling a feeling of crepitation was produced on pressure with the finger. There was no pitting on pressure. At 10.10 A.M. forceps were applied, and the child delivered, the perinæum being slightly torn. The atient did not complain of any pain during the occurrence of the welling. She remained in the same condition during the day.

Progress.—On the evening of the first day after delivery the mphysema was considerably lessened, and by the fifth day it had ntirely disappeared. Patient for eleven days after delivery was nable to pass her water, and required the constant use of the atheter. She complained of pain when the catheter was used. On examination it was found that the fourchette had not been torn through the middle, but had been ruptured at one side so as to leave a triangular raw surface on the inside of the left labium. This surface granulated and healed before the dismissal of the patient She had, some weeks before delivery, suffered from a similar temporary emphysema from straining at stool.

Case of Albuminuria.—Mrs Sutherland, æt. 40, twelfth pregnancy; last catamenia (?). Admitted at 2.30 P.M., 20th September; delivered 23d September of a premature living male child (6–7 month) weighing 3 lb. 11 oz. The patient, a large, powerful woman, was removed from the Buchanan Ward, Royal Infirmary, to this hospital on the afternoon of the 20th September. She was at this time in a semi-comatose condition, being roused with great difficulty sufficiently to answer in monosyllables simple questions; breathing somewhat stertorous, pupils slightly contracted. The abdominal walls were loose and flabby, and slightly projecting; fundus felt at the level of the umbilicus. *Per vaginam*, the os high up, looking backwards, admitted easily the middle finger-tip. Owing to the restless state of the patient further examination was not made. Urine turbid, high-coloured, large mucous deposit, acid; sp. gr. 1030; albumen ¾. Numerous tube-casts, mostly medium and small-sized, hyaline, some granular. Two drops of croton oil were administered, and digitalis fomentations applied to the loins; milk diet; pot. acet., ʒj. every four hours. During the night she was extremely restless and often violent, requiring two or three nurses to hold her in bed. The bowels were freely moved.

21*st*, A.M. — The patient still much in the same condition, occasionally becoming sufficiently conscious to answer questions. During the afternoon one-third grain of pilocarpin was given hypodermically, producing profuse sweating, commencing in head and neck and extending to the trunk, with free salivation; the patient soon after the commencement of the sweating becoming much less restless, and for upwards of an hour was sufficiently conscious to converse. The potass. acet. and digitalis continued during the day. In the evening she relapsed into her former condition, and at midnight dry cupping was performed over kidneys without marked effect. The quantity of urine passed was small, but could not be ascertained, as it was passed in bed.

22*d Sept.* — Urine alkaline; sp. gr. 1029; albumen ¾; no tube-casts discovered. Condition unaltered. Pilocarpin injection of one-third grain repeated on two occasions with similar effect. During the evening there was slight hæmorrhage, and on vaginal examination the os was found to have somewhat dilated and was very soft. During the night the patient was again exceedingly violent, and was with difficulty kept in bed.

23d.—At 5.30 the membranes ruptured. The os was found fully dilated, the back of the child presenting, the spines of the vertebræ running in the transverse diameter of the pelvis, nearer the symphysis than the sacrum, the trunk of the fœtus being jammed down into the pelvis transversely, the head lying in the left iliac fossa. By combined internal and external manipulation one foot was drawn down, and then the other, and delivery thus effected, with the aid of expression, without difficulty. Delivery had no effect on the mental condition of the patient.

24th Sept.—Urine slightly turbid, alkaline, albumen ½; a few tube-casts (hyaline) and one blood-cast. Patient less restless, still semi-comatose. Treatment continued, along with tr. ferri mur. and infus. quassiæ.

26th.—Urine acid; sp. gr. 1032; albumen a trace; no tube-casts. On the evening of this day the patient, for the first time since admission, was thoroughly roused from her semi-comatose condition, into which she did not again fall. She did not at any time show any convulsive symptoms. A small trace of albumen, such as is almost constantly present in the urine of puerperal women examined here, remained during the rest of her stay in hospital, but no more tube-casts were discovered. During the second week of her puerperium she suffered from boils, which appeared on the buttocks and upper part of thighs; but though she recovered strength very slowly, she had no other untoward symptoms.

Extern Cases.—There were 143 women delivered. Labours were classified:—Natural labours, 128; preternatural, 4; complex, 2; abortions, 6; laborious, 3.

Record of positions valueless, owing to the observations being made by students only. *Preternatural,* 4 footling cases. *Complex labours,* twins, 1. Forceps in four cases—1. Head remained in cavity between R.O.P. and transverse, exhaustion, head delivered R.O.P.; 2. Inertia; 3. Rigid external parts; 4. Inertia and exhaustion. *Mortality*—maternal, *nil;* fœtal, 12; infantile, 1.

Case of Minor Hydrocephalus and Cephalotripsy.—Mrs Burns, æt. 36, primipara; delivered 19th October, R.O.P., male child, dead. On 18th October patient was seen by two pupils, who found the woman in labour, os about the size of a florin, and head presenting. As the labour made no progress for twenty-four hours, the resident surgeons were sent for, who diagnosed a minor degree of hydrocephalus, with the cervix thinned out over the head, and the os dilated to the size of a claret-glass. Dr Croom was requested to see the case, and confirmed the diagnosis. Under his superintendence Mr Huxtable applied forceps; but as the forceps threatened to slip, a trocar and canula was introduced, and twelve ounces of fluid drawn off. Further traction with the forceps was now made without effect; the head was accordingly perforated with the ordinary perforator, and as it still refused to be dragged through the brim, the cephalotribe was applied, and compression and extraction accomplished.

I beg to thank my residents, Dr Limont and Messrs Huxtable and Hewetson, for their unwearied endeavours to carry out the careful antiseptic precautions to which I referred in a paper at a former meeting of this Society.

ARTICLE III.—*Case of Splanchnic Inversion in an Athletic Young Man aged Nineteen: with Remarks on the Cause and the Diagnosis of Congenital Transposition of Viscera.* By Sir JOHN ROSE CORMACK, M.D. Edin.; M.D. Paris; Fellow of the Royal College of Physicians of London; Member of the Société Clinique of Paris; Physician to the Hertford British Hospital of Paris; Chevalier de la Légion d'Honneur.

(*Continued from page* 889.)

DIAGNOSIS OF CONGENITAL TRANSPOSITION OF VISCERA.

DEXTRO-CARDIA may exist as a congenital malformation irrespective of splanchnic inversion. From malformation, the heart may lie to the right. Specimens of this condition are seen in still-born fœtuses and in fœtuses which have survived birth only for a few hours or days. Such cases do not require to be discussed in speaking of the diagnosis of splanchnic inversion in the living subject.

Congenital dextro-cardia may also exist in a viable fœtus as a consequence of intra-uterine inflammation. The heart may lie to the right as the result of intra-uterine pericarditis or pleurisy, or of both combined. In such cases, attachments are formed by bands of false membrane between the pericardium and neighbouring parts. The situation of these fibrous bands may be such that in virtue of their inherent tendency to progressive contraction the pericardium with the contained heart may be dragged over to the right side. This progressive displacement may begin before, and be continued after, birth.

In after life, as the result of certain morbid processes, the heart may be displaced to the right. This may be caused by intra-thoracic tumours, by pneumo-thorax of the left side, and by both the primary and the secondary results of pleurisy. A left pleuritic effusion may push the heart over to the right side; and it may be permanently retained in that situation by adhesions. The differential diagnosis between such cases and cases of congenital transposition of viscera need not perplex the clinician.

When one is led to suspect splanchnic inversion in a case in which the heart is on the right side, it is necessary, in the first instance, to exclude dextro-cardia from the causes now enumerated. That exclusion may be generally regarded as accomplished, when we find a clear sound on percussion in the normal cardiac region, a dull sound to the right of the sternum over an area corresponding in size to the normal cardiac area, and the beat of the apex of the heart in the fourth or fifth intercostal space. If we find by percussion that the liver is on the right side, the diagnosis has been settled by a crucial test. Further details, establishing the existence of splanchnic inversion, can then be made out at leisure. For example, by distending the stomach by administering an effervescing draught, it will be easy to establish the limits of that organ by percussion. The cæcum will be found to the left instead of to the right; the descending colon will be found to the right, and the ascending colon to the left. The rectum, instead of being, as usual, on the left, is on the right. By injecting an effervescing solution into the rectum, the position of that portion of the intestinal canal can be determined. It was not till my patient had passed from under my observation, that I became aware that Ziemssen and others had during life established the transposition of the stomach and intestines by gaseous distention. The test, from its simplicity and sufficiency, deserves to be remembered.

APPENDIX.

My case possesses its principal clinical interest from the transposition having been incidentally and unexpectedly discovered during life in an athletic young man, who had never suspected that his internal anatomical arrangements were different from those of other people. That the reader may understand the nature of these differences, by seeing a representation of presumably very similar anatomical arrangements, I subjoin the interesting and instructive history of a case described by Professor Wenzel Gruber of St Petersburg. So far as I know, neither the description of the autopsy nor the wood-engraving have as yet been transferred to British medical literature.

Professor Gruber's Case and Commentaries.

On the 25th September 1864, a young soldier, aged 23 years, was admitted to the 2d military hospital. He was suffering from enteritis, which terminated fatally on the 20th October.

On opening the body, transposition of the thoracic and abdominal viscera was observed. Careful examination, after previous preparation and injection of the vessels, etc., gave the following results:—

The heart was reversed, the principal portion lying over to the right. The apex was turned downwards to the right, the base upwards to the left and slightly to the back. The right ventricle was to the left and front; the left ventricle was to the back and right. The form, size, and build of the heart were normal. The lungs were transposed; each lung had two lobes. The aorta, vena cava, etc., participated in the general transposition.

The direction of the S-shaped curvature of the œsophagus is reversed, and it presents the following bend—Ƨ. The upper part extends beyond the right side of the trachea, so that the tracheo-œsophageal hollow is to the right instead of to the left. The thoracic portion crosses the right bronchus instead of the left from behind; and the arch of the aorta to the left instead of to the right. The bend of the œsophagus is such that its inferior right side is presented in front.

Either *lung is formed of but two lobes.* [This is unusual in cases of splanchnic inversion.] The upper lobe of the right lung terminates in front in a tongue-shaped prolongation, 1¾ inch long and 1¼ inch broad at its base, and 6 lines broad at its point: this prolongation envelops the apex of the heart.

The right lung exhibits all the characteristics of the left lung; the left lung, although possessing but two lobes, exhibits all the characteristics of the right.

The thoracic portion of the vertebral column is curved, with the convexity to the left, between the 4th and 7th dorsal vertebræ, which is the reverse of the usual bend.

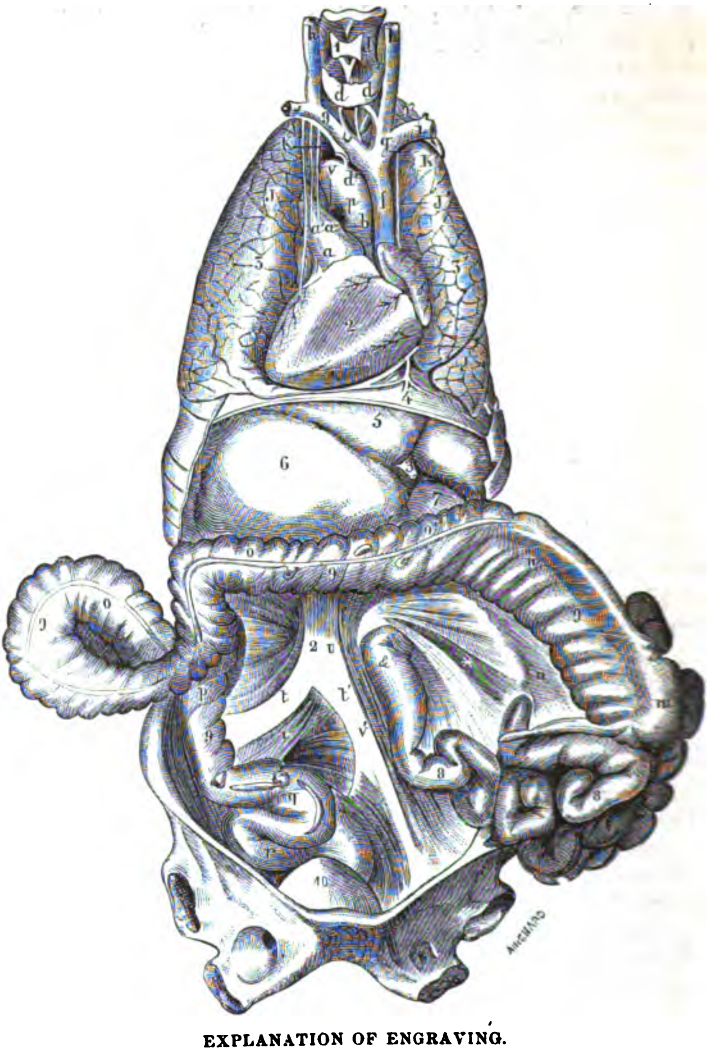
The position of the diaphragm and of its openings is reversed; thus the foramen for the passage of the venæ cavæ is in the right half.

All the organs of the abdomen are transposed. The liver is to the left, the greater part of it in the left hypochondrium, and extends its left lobe, transposed to the right, into the right hypochondrium, thus covering the stomach. The stomach is in the right hypochondrium, the pylorus extending into the left hypochondrium. The spleen is situated behind the stomach in the right hypochondrium. The pancreas lies with its head to the left and its nether extremity to the right: the head is joined to the first bend of the duodenum, and inserts itself into the transverse colon and into the upper part of the ascending colon.

The left kidney is 1¾ inches lower down than the right one. The cæcum lies in front of the left iliac fossa. All the other parts of the abdominal viscera are similarly and regularly transposed.

While the descending colon follows its usual course in the iliac region, the ascending and transverse colon, together with the jejunum and ileum, are suspended from a broad common mesentery in front of the posterior wall of the abdomen. This common mesentery emerges from below the pancreas by a twisted root from the peritoneal sac. It soon widens out, and holds suspended to its front and left border the transverse and ascending colon; and to its lower and left posterior border, the jejunum and ileum.

In cases where a common mesentery exists, it usually widens out



EXPLANATION OF ENGRAVING.

1, Hyoid bone, larynx, thyroid gland; 2, heart; 3, right lung; 3′, left lung; 4, diaphragm; 5, liver; 6, stomach; 7, upper portion of the curve of the duodenum; 8, ileum; 9, large intestine; 10, bladder; 11, common pulmonary artery; *a*, do., right; *a′*, do., left; *b*, arch of the aorta; *c*, innominate artery; *d*, right carotid artery; *d′*, left carotid artery; *e*, right sub-clavian artery; *e′*, left sub-clavian artery; *f*, upper vena cava; *g*, right innominate vein; *g′*, left innominate vein; *h*, right interior jugular vein; *h′*, left interior jugular; *i*, right sub-clavian vein; *i′*, left sub-clavian vein; *k*, right vagus; *k′*, left vagus; *l*, right phrenic nerve; *l′*, left phrenic nerve; *m*, cæcum; *n*, ascending colon; *o*, traversing colon; *p*, descending colon; *q*. sigmoid flexure; *r*, rectum; *s*, abdominal aorta; *t*, right common iliac artery; *t′*, left common iliac artery; *u*, lower v. cava; *v*, right common iliac vein; *v′*, left common iliac vein; *aa*, subthyroid veins; *β*, ligamentum arteriosum; *γ*, right recurrent nerve; *δ*, tongue-shaped appendix to upper lobe of liver; *ε*, ligamentum suspensorium and teres of liver; *ζ*, duodeno-jejunal flexure; *η*, abnormal loop of the right portion of traversing colon; * common mesentery for ileum and larger first half of large intestine.

rom its root to the left towards the right when the viscera are not ransposed (see *Bulletin de l'Acad. d. Sc. de St Petersb.*, vol. v. p. 49). n this case, it widens out to the left, having its root to the right. t may therefore be concluded that the mesentery participated in he general inversion.

A very careful examination of the subject elucidated the following curious facts:—

1. Entire transposition of all the thoracic and abdominal viscera, of all the vessels of both cavities, and partly of the nerves.

2. Local curvature of the vertebral column to the left (convexity to the left).

3. The existence of *two small additional spleens.*

4. The peculiar position occupied by the duodenum with regard to the mesentery.

5. Local transposition of the processus vermicularis, together with its transposition from back to front.

6. A single common mesentery for the jejunum and ileum and for the large intestine.

7. In the peritoneum, between the intestines, was found a small horny substance of the shape of a bean, 3½ l. long and 2½ l. broad. At its smaller extremity, there was a warty excrescence, from which probably had formerly depended a thread by which the excrescence had been attached to the intestines. At the time the body was opened, the excrescence was quite free and unattached. At the front end of the lower lobe of the liver, transposed towards the right, 1¾ inches to the right of the umbilicus, there hung, suspended by a triangular pseudo-membrane, another horny substance in the form of a rectangular plate, 1¾ inches long and 1½ inches wide, and 2½ lines in thickness. The thin pseudo-membrane is 1 inch long and from 1 inch to 1½ inch wide. Above the liver, further on to the right, another similar long square plate, about half the size of the other, was discovered, attached by a pseudo-membrane to the diaphragm. Lastly, quite to the right, over the right extremity of the liver, was a third biscuit-shaped horny plate, closely attached to the under surface of the diaphragm. Had the subject's life not been cut short, the first two plates, particularly the one suspended from the liver, might possibly have become detached by the rupture of their pseudo-membranes, and have so become free bodies in the peritoneal sac, like the one discovered there.

Gruber comments upon seventy-nine other authentic cases studied by him. Of these, seventy-one were cases of general transposition of all the thoracic and abdominal viscera: in the eight others there was only transposition of the abdominal. Seventy-eight of the cases were observed in the human subject. One case of general transposition of all the viscera occurred in a horse.

Further examination of these seventy-nine cases showed that forty-nine subjects were men, and nineteen were women. In eleven cases, the sex was not mentioned. In two cases, the subject was a fœtus; twenty other subjects were children ranging from birth years of age; two were between the ages of 15 and 17½ yea and fifty-five were adults between the ages of 20 and 84 years.

The fecundity among the female subjects was not inferior that of other women. The same average age had been attained both sexes.

The local curvature of the vertebral column was only notic and studied in eleven cases.

The question of left-handedness was not elucidated by study of these seventy-nine cases.

The spleen was entirely wanting in three cases: it was reduced a mere rudimentary string in one case; in one case it was divid into two, in another into three portions. In one case (Grub the spleen was accompanied by two additional spleens; in anoth case (Curling) there were four additional spleens; and in anoth case (Baillie) there were even five additional spleens.

Abnormal position of the kidneys was noted in eight cas In one case (Sue) there existed only one kidney.

The relative position of the testicles was noted in seven cas In one case, the internal spermatic vessels were not transposed (A. Cooper).

Gruber cites a case published by Sibiriakoff at St Petersburg in 1829, entitled *Anatomical Description of Transposition of the Hea of all the Large Vessels, and of a Portion of the Abdominal Visc together with Complete Absence of the Spleen*, St Petersburg, 182 The stomach and duodenum seem to have occupied their usual position. The spleen was wanting. The description is unfortunately incomplete.

Gruber's monograph is nearly exhaustive up to the date of its publication.

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1. Baer (Carl Ernest von):—*Entwickelungsgeschichte der Thiers*, i., p. 51.

2. Burgl (Georg):—Two papers in Nos. for June 13 and 20, 1876, of the (Munich) *Aerztliches Intelligens Blatt*, entitled "Zur Casuistik des Situs Viscerum mutatus." An abridged translation is given in the *London Medical Record* for 16th October 1876. The author mentions four cases which had come under his own observation within a period of seven years; two of them he studied, and has described. He gives a valuable bibliography of the subject.

3. Géry:—*Archives Générales de Médecine* for 1843, t. i., p. 62.—Case of a man, aged 20, who died of pulmonary disease. During life the beating of the heart had been observed on the right side:

is was attributed to an aneurism of the aorta having pushed the
eart to the right. The autopsy showed that there was no aneur-
m, and disclosed splanchnic inversion. The parts are preserved
the Musée Dupuytren of Paris. The aorta turns from left to
ght, and crosses over to the right side of the dorsal vertebrae,
hich present the lateral curvature of the column, under nor-
al conditions, existing on the left side. This tends to con-
rm the opinion of Cruveilhier that this curvature can in no
spect be compared to the antero-posterior curvature of the
ertebral column, but must be rather considered as a groove or
anal analogous to that presented by the first rib at the passage
f the femoral artery—only that here the canal is deeper because
t corresponds to a larger artery.

4. Herriet:—*Bulletin de la Société Anatomique de Paris*,
nnée 48me, p. 707.—Case of splanchnic inversion in a man who
ied suddenly with extensive pulmonary and cardiac disease a
ew hours after admission into the Hôpital St Antoine of Paris.
uring life, the sounds of the heart were observed to be "very dis-
ant." Till the autopsy, the transposition was not discovered.

5. Hickman:—*Transactions of Pathological Society of London*,
Session 1868-1869, vol. xx. p. 88.—Case of George S., who died at
ge of six weeks. During his whole life he was of a livid red
olour, and fretful, but took the breast well. The autopsy dis-
losed malformation of heart, transposition of auricles and
orta, absence of pulmonary artery, patent foramen ovale, communicating ventricles, with transposition of viscera.

In the same volume, the same author has described a case of splanchnic inversion of much clinical interest. Susannah S. died at the age of 28. At the autopsy were found transposition of viscera, malformation of heart, pulmonary veins from right lung entering left auricle, and from left lung entering right auricle. During the latter years of her life S. S. had frequent and long-continued attacks of rheumatism and rheumatic fever, and came under the care of several physicians at various hospitals and infirmaries. By some, the misplacement of the heart was noticed, and general transposition suspected—especially at St Mary's Hospital, by the late Dr Sibson, who had careful notes taken of her case. Among the anatomical anomalies met with in this case, we are told that of *spleens there were nine*, scattered about the folds of the peritoneum, at the large end of the stomach, and between it and the colon. Dr Hickman mentions that in a case of transposition of viscera recorded in the *Philos. Transactions* for 1788 (vol. lxxviii., part 21) there were six splenicul. The late Dr Sibson's unpublished notes probably contain interesting information in relation to the phenomena during life resulting from the remarkable arrangement of the pulmonary veins. The parts described in Dr Hickman's valuable notices are illustrated by excellent engravings.

6. LUYS :—*Gazette Médicale de Paris* for 1856, p. 77.—Case splanchnic inversion in a woman, aged 72, who died of cere hæmorrhage an hour after admission to the Salpêtrière, Pa The case was brought before the *Société de Biologie.*

7. MORAND and MERY :—*Mémoires de l'Académie des Scie* t. x. p. 73.—Account of the examination of the body of soldier, aged 72, who died in the Hôtel des Invalides of P The autopsy revealed transposition of the thoracic and abdomi viscera, veins, and arteries. The details of the anatomical arrangements are fully described.

8. PETREQUIN :—*Gazette Médicale* for April 1837.—Case of man, aged 20, who died in the Hôtel Dieu of Lyons in 18 The autopsy revealed congenital splanchnic inversion. The leading anatomical dispositions are described.

9. ROSTAN :—*Nouveau Journal de Médecine*, Paris, May 18 p. 29.—Case of Marie M. Traparis, who, in the year 1818, when 67 years of age, was received as a patient into the Salpêtrière, Paris. She had been of vigorous constitution, and had given birth to 12 children. For six years prior to admission, her health had been impaired. On admission, there was tumultuous beating on the right side of the chest, and no cardiac pulsations on the left side. The diagnosis was displacement of the heart to the right by aneurism of aorta. The autopsy showed that there existed morbid conditions, but no aneurism, and revealed congenital splanchnic inversion. The leading anatomical arrangements are described.

10. ST HILAIRE (Geoffroy) :—*Histoire des Anomalies*, t. ii.—Two chapters are devoted to splanchnic inversion in the human subject and in the invertebrata. The different theories are examined, and the cause of splanchnic inversion is investigated. A valuable bibliography is given.

ARTICLE IV.—*Case of Elephantiasis of Scrotum.* By SURGEON H. D. COOK, M.B., Civil Surgeon, Vellore.

ABDOOL RYMA COOTY, Moplah, age 40, came to me from Ponnani, Malabar, on the 20th May 1880, with the above disease, and requested its removal.

For a description of the tumour I refer the reader to the photograph taken before the operation by an amateur native photographer, and through the kindness of Mr Whiteside, the collector of the district, who took a great interest in the case.

The photograph shows an immense pear-shaped tumour, the circumference of the fundus of which is as large as that of the patient's waist, reaching down to the calf of the leg in the erect posture. The penis is embedded; the preputial orifice is situated below the

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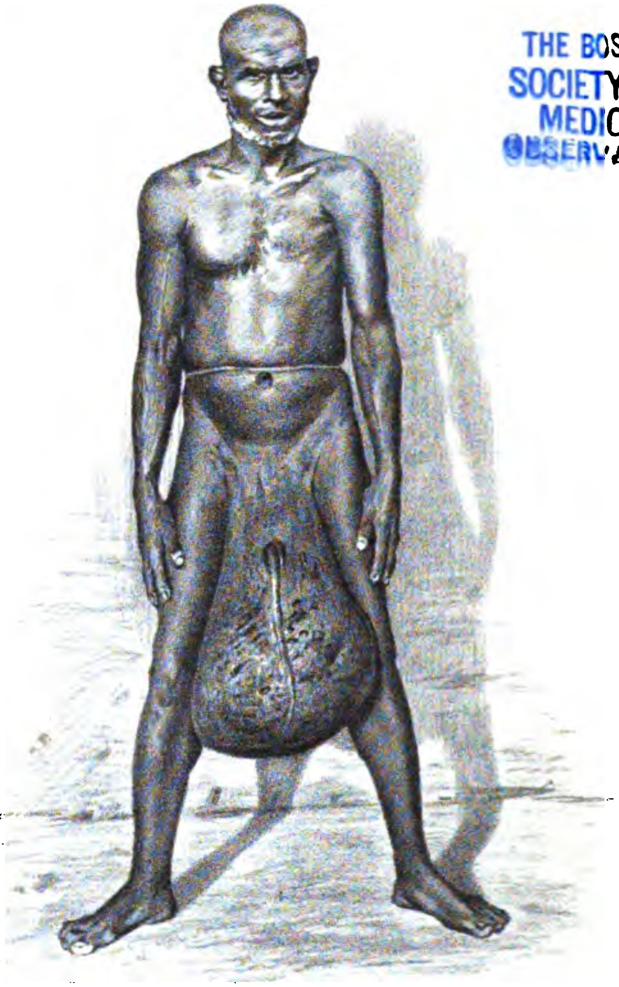

J. Bartholomew, Edinr

pubes. The scrotal raphe is very prominent, and the surface uneven and tuberculated.

Unfortunately the circumference of the tumour was not taken, but this can be well judged by the illustration. I may say that the tumour was large enough in circumference to be not more than encircled by the forearms of the patient. It was most unusually hard, and consequently very heavy; the lower portion especially was as hard as a stone. The man could scarcely walk any distance, and, as can be seen by the illustration, his legs were much apart. There was no appearance of penis; the meatus was only visible, but by manipulation about an inch of the organ could be protruded, which was a great guide to me when dissecting out the organ. The testicles were to be felt—the right much enlarged and intensely hard, and the left slightly enlarged, but not hard. The man's general health was fair.

As I was examining the patient, Dr H. Scudder of the American Mission, Rampett Dispensary, came to see me, and he kindly volunteered his assistance, as also did Dr Fawcett of the 25th M.N.I. after I informed him of the case; and to him I am greatly indebted, as he was, I believe, the means of saving the man's life at a very anxious moment.

The operation was performed on the 26th May 1880, after the man had been to some shrine to invoke his deity to protect him from the danger he was about to encounter. Chloroform having been administered, the Esmarch's bandage was firmly bound round the tumour that lay like a mountain on the operating table, and it was with some difficulty that the bandage was applied to the unwieldy mass. Before the tubing was applied around the neck of the tumour I dissected out the penis and laid it upwards on the abdomen, and then the tubing was firmly applied underneath the penis, each end being held by an assistant. I then proceeded to dissect out the right testicle, which was the most difficult part of the operation, as it was deeply imbedded in the hard, gristle-like tissue of the tumour, and it was firmly adherent to the surrounding tissue. The welling up of venous blood at this stage was great, but very little arterial blood was lost; a few small arteries which were not compressed by the Esmarch tubing spouted, and were immediately twisted. The right testicle having been got out, Dr Scudder relieved me of the knife and proceeded to dissect out the left, which was a comparatively easy business, as it was not deeply imbedded and had little or no adhesion. At this stage the man suddenly became collapsed, his pulse quite imperceptible, and respiration suspended, and it was with a sad heart that I exclaimed, "He is done for;" but Dr Fawcett was not so hopeless, and he immediately resorted to artificial respiration, assisted by Dr Scudder, and finally, on Dr Fawcett withdrawing the tongue and working well on the chest, the patient bit Dr Scudder's finger, which was the first sign of life. He revived somewhat, and I immediately proceeded with the operation, which now consisted of removing the enormous mass as it lay divested of penis and testicles.

We decided to take away the right testicle, as it was diseased. I accordingly transfixed the enlarged cord with an aneurism needle, ligatured it, and then removed it. I then removed the mass by making two side flaps, which were brought together, and so no raw surface was exposed. The result was all that could be desired, the flaps uniting underneath the penis. I regret a photograph was not taken after the operation; the man went away suddenly during my temporary absence from the station. The tumour, when removed, weighed 64 lbs.

The man had two severe attacks of secondary hæmorrhage, which weakened him considerably; but he is now quite well, and was discharged from hospital on the 23d July 1880.

REMARKS.

If I have to perform this operation again (which is exceedingly likely) I would, in the first place, pay much greater attention to the evacuation of the blood in the tumour before removal.

Secondly, I would elevate the tumour by means of a rope suspended from the ceiling, and let it be in that position for twelve hours. By this means the tumour would be comparatively emptied of blood, and in that position I would dissect out the penis and then apply the Esmarch bandage.

Thirdly, I would have no flaps of skin. I would leave the testicles exposed, and remove the tumour *en masse*. The penis would be dissected up, the testicles dissected out, and then by one sweep of the knife the tumour would be removed; the resulting sore would gradually heal.

Fourthly, I would see that my Esmarch bandage was in good condition. In this country this appliance is very apt to get out of order and lose its elasticity. In this case, in the middle of the operation the tubing gave way, but fortunately only one turn of it, and before the last turn "gave" we caught hold of both ends. If all the turns had given way, the rush of blood would have been serious, if not fatal.

ARTICLE V.—*Accumulations of Ceruminous and Sebaceous Secretions and Epidermis, and Foreign Bodies, in the External Auditory Meatus.* By ROBERT SINCLAIR, M.D., Physician and Aural Physician to the Dundee Royal Infirmary.

ACCUMULATIONS of ceruminous and sebaceous secretions and epidermis in the external auditory meatus rank next in frequency to the inflammatory diseases of the ear. Of 1500 cases treated at the

Cork Ophthalmic and Aural Hospital, 295 belonged to this class; of 600 cases recorded by Dr Turnbull of Philadelphia, 113 belonged to it; and of 500 cases recorded by Dr Roosa of New York, 46 were of this nature. The probable explanation of Dr Roosa's proportion being so much smaller than the others is that he invariably looks beyond the mere accumulation and tries to discover its cause, which, when possible, he records as the disease instead of the *symptom*, the accumulation of inspissated secretion. It is obvious from a glance at these figures that ceruminous accumulations are not nearly so frequent as they are commonly supposed to be by the laity or by that section of the profession whose chief therapeutical resource in the diseases of the ear is the indiscriminate use of the syringe. Men who would scorn the suggestion of making an incision into the skin for the purpose of removing a fragment of a needle that could not be felt, systematically and violently inject copious supplies of water into the external auditory meatus for the removal of wax that never existed, and whose nonexistence could easily have been determined by the simple expedient of a moment's inspection by means of a speculum and reflected light. It is high time that this absurd routine practice should cease.

The causes of these accumulations may be very briefly detailed. They are, mainly, chronic inflammation in the tympanum and the meatus; narrowing of the meatus from any cause; the mischievous practice of cleansing the ear by inserting the twisted corner of a towel or an ear-pick, which not only pushes existing wax against the membrana tympani, but stimulates the glands to increased secretion; and, lastly, that pest of the nursery, the so-called aurilave, which is held in high esteem by nurses whose demon of cleanliness is only equalled by their stupidity.

Pain, giddiness, noises in the ear, and more or less deafness are the symptoms commonly produced by these accumulations. But, unfortunately, the mischief does not always terminate in the meatus. A whole host of evil effects are liable to be produced by pressure of the accumulation on the membrana tympani, through it on the structures of the tympanum, and so on to the labyrinth. I have a very distinct recollection of a patient who had been under the care of a highly competent physician for cirrhotic kidney, from which he undoubtedly suffered, and whose unilateral headache, giddiness, sleeplessness, and unsteadiness of gait were attributed to the effects of this disease. On one occasion, when trying to discover some less recondite cause than granular kidneys for his excruciating headache, I noticed that he winced when the tragus of the corresponding side was pressed. I immediately made an examination, which resulted in the discovery of a plug of wax in the ear. The instillation of warm oil and repeated syringing with a warm alkaline solution in a few days dislodged from his meatus about a teaspoonful of wax and epidermis, and his formidable nervous symptoms entirely disappeared.

This simple plan is all that is ever required for the treatment of these accumulations. But there are one or two matters of detail that must be attended to in order to secure their safe and successful removal. If the plug appear hard, it should be first softened by the instillation of warm oil or weak and warm alkaline solutions. The washing out should be accomplished by a good brass syringe, with a ring on the piston for the thumb, and two rings on the proximal end of the barrel for the fore and middle fingers, which enable the operator to proceed slowly and cautiously. The nozzle should be sufficiently fine to permit of its insertion into the smallest meatus; the auricle should be pulled upwards and backwards, so as to straighten the canal as far as possible; and lastly, the stream should be carefully directed along the roof of the meatus in order to allow the outflowing current unimpeded progress along the floor. A channel is commonly used to protect the patient from an involuntary bath.

A certain amount of giddiness and faintness frequently result even from the most careful use of the syringe, and, if at all severe, should warn the operator to desist from his efforts for a time. After the wax has been entirely removed, a gentle inflation with Politzer's instrument should be practised to restore the membrana tympani to its normal situation, which is likely to have been disturbed by the pressure of the plug and of the water used for its removal.

Foreign Bodies in the External Auditory Meatus.

The foreign bodies which at various times have been introduced into the meatus acknowledge no limits of classification but the limits of human ingenuity and mischief and the capacity of the canal. Once in, they are usually unoffending if left alone. It has been reserved for surgical ingenuity to devise instruments for converting them into serious dangers to the integrity of the ear and the tenure of life. Perforation of the membrana tympani, suppuration of the middle ear, removal of the ossicles, cerebral abscess, and death are among the results on record of misapplied manipulative skill. "From some source or other," says Dr Roosa, "the laity" (and he might have added, a large section of the profession) "have got the idea that a foreign body in the ear, like a wild beast accidentally let loose upon a civilized community, is to be hunted down at all hazards."[1]

In ninety-nine cases out of a hundred the only means required for their removal is syringing with warm water, conducted in the manner described for the removal of wax. I can recall only one case in which I was tempted to use an ingenious instrument, and that once I regret. But I need hardly say that even syringing is not to be adopted unless unequivocal evidence of the presence of

[1] *A Practical Treatise on the Diseases of the Ear.* By D. B. St John Roosa, M.D. Third edition, p. 167.

he body has been obtained by the only safe and reliable means—he use of the speculum and a good light. It is often difficult to persuade a patient who has undoubtedly had a foreign body in his ear that the body has escaped, when he continues to experience the symptoms which existed during its residence. The analogous case of a foreign body in the eye will readily occur to you as a familiar example of a similar condition.

Should syringing conducted in the ordinary way, however, fail to dislodge the body, the plan recommended by Voltolini should be tried. "The child is laid upon a table, so that its head may hang a little over the end of it. The membrana tympani then forms a plane with the upper wall of the auditory canal that runs obliquely downward. The syringing is then performed as usual. In two cases Voltolini has succeeded in removing the foreign body by this manœuvre when the ordinary method did not succeed."[1]

"Voltolini has also used the galvano-caustic in breaking up the so-called Johannis brod or carob bean. The bean having become so firmly wedged into the ear that it was impossible to move it one way or the other, he inserted the needle 'with lightning-like rapidity' into the body, and when it cooled the bean broke with a snap audible to the patient and to those about. When sufficiently broken up, it was removed by syringing."[2]

When the body is too hard to be softened and broken up by warm water, and too large to permit of the current of water passing beyond it, another plan may be adopted which has been tried with success. The foreign body and the meatus having been carefully dried by a piece of absorbent wadding, a stick hollowed out at one end, or a brush, is smeared with glue or coaguline, and passed down the meatus till it presses against the body. Some minutes are allowed to elapse to permit of firm adhesion taking place, and the instrument and the body are then slowly withdrawn together.

There are perhaps two exceptions to the condemnation of surgical appliances for the removal of these foreign bodies. If a fair amount of careful syringing fail to dislodge the body, and if a Wilde's snare be obtained and its wire can be safely passed round the body, it may be cautiously used. The other case is the very rare one when a long and narrow body—a piece of slate-pencil, for example—is firmly wedged in an oblique position in the canal. Here a fine forceps is probably the best instrument in careful hands.

I hope I have made it sufficiently clear that the safe removal of ceruminous and sebaceous accumulations and foreign bodies from the external auditory meatus can only be conducted on the principles which guide us in the removal of foreign bodies from other organs and tissues. We must have demonstrable proof of their presence, and we must be satisfied that the measures proposed for their removal shall not entail greater risks than are likely to result from their continued residence in the part. The experience of military surgeons has made us amply familiar with instances of bullets remaining in the tissues for long periods of time without doing serious harm; and if this is possible where a serious breach of continuity has occurred, something more than mere possibility may surely be predicted when no such injury exists, and a body, usually smooth and round, is lying in a natural canal and surrounded by cutaneous surfaces. As a matter of fact, in an overwhelming majority of cases the integrity of the meatus and the membrana tympani is undisturbed up to the commencement of surgical proceedings, which are therefore mainly responsible for the formidable results which have followed. In the terse words of Voltolini, "Even the point of a dagger, if allowed to remain quietly in the ear, will not do so much harm as forcible attempts to remove it." But I by no means underestimate the importance of removing bullets from the muscles and bones, and foreign bodies from the ear.

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[1] *A Practical Treatise on the Diseases of the Ear.* By D. B. St John Roosa, M.D. Third edition, pp. 169-70.

[2] *Ibid.*, p. 170.

Military surgeons are now unanimous in the opinion that bullets should be speedily extracted from the tissues; and the practitioners who have given any attention to the diseases of the ear are not less unanimous in advocating the early removal of foreign bodies from the auditory meatus. This agreement in principle involves no agreement in detail. The grounds for the dissimilar proceedings that have received the sanction of all recent competent authorities must be sought in the different mode of entrance, the different parts involved, and the probable results of neglect of the specific method proposed in either case.

Let us consider the gunshot injury first. The bullet is driven with great force and velocity through the skin, cellular tissue, fascia, muscles, and, it may be, into a bone. It may become encysted in either the soft or the bony tissues. But no prudent surgeon would trust to this possibility as excusing him from the duty of extracting a bullet which is lying in dangerous proximity to important structures, and may at any moment cause serious suppuration, hæmorrhage, or paralysis. He would consider himself bound to remove it without injury to the contiguous parts if possible; but, if necessary, he would not hesitate to make a second wound, and to use the elevator, bullet-forceps, or screw. In a word, great force has been used in the introduction of the bullet; and, if need be, force must be applied for its removal.

The case of the foreign body in the auditory meatus is widely different. It is seldom introduced with greater violence than can be excited by the fingers of a child, who is usually too much alarmed at the success of his folly to prosecute his experiment very far. It is lying all but harmlessly in a skin-lined cavity, sually in the wide external part of the meatus, and therefore at a afe distance from the tympanum. Injury of the meatus and a osition of the body beyond or in the narrow middle portion of the neatus are nearly always the result of injudicious attempts at emoval—in other words, of bad surgery. Acute inflammation of he organ, destruction of its delicate structures, and cerebral ıbscess, must unfortunately, as a rule, be attributed to the same ause. From these considerations it naturally follows that no line f treatment can claim a common-sense origin unless it be largely omposed of gentleness and patience. Warm water and a good rass syringe usually meet the first indication; the doctor must meet the second.

ARTICLE VI.—*The Influence of Antiseptics upon Legal Medicine: a Lecture delivered in the Course of Clinical Surgery in the Munich Hospital, in the Winter Session* 1879-80. By Dr J. N. RITTER VON NUSSBAUM. Translated by JAMES SCOTT, M.B.

THEMIS, the first wife of Jupiter, was worshipped as the goddess of Justice, and altars and statues were erected to her honour in various parts of Greece. The Romans, also, had a temple on the Capitol consecrated to her. She was at first represented with large, penetrating eyes, which were widely open; but at a later period a bandage was put over her eyes, as a sign of her impartiality.

In early times the idea of strictness was not so closely associated with that of justice as in recent times, for we read that while the wars of the Titans were taking place upon the earth, Astræa, the daughter of Themis, herself taught men to live in fairness and equity, and it has been said, with regard to this epoch, that men led happy lives, without care, in innocence, freedom, and enjoyment. It was at this period, also, that Saturn held his sway, and poets have described it as the happiest of all times, "the Golden Age."

Since then times have changed! Innocence, freedom, and pleasure have gone backwards and forwards between earth and heaven, cares have multiplied, and Astræa has forsaken this planet, and returned to her Olympian home; yet it has not at all times been a more wicked world, and the goddess Themis has often uncovered her eyes and looked out upon the world, to find a very large amount of justice and equity among men.

The science of jurisprudence has certainly not lagged behind the other sciences in its progress, and since intercourse among men has been so much facilitated by the invention of railways and telegraphs it has undergone a remarkable development. During the last few hundred years this improvement has been gradually going on, and it is gross injustice always to be finding fault with the present times, and praising up the past as "the good old days."

On the contrary, when I think of the administration of justice, I denounce the past, and emphatically prefer the present.

In speaking of this subject I will not dwell upon those horrors and crimes the perpetrators of which went undetected and unpunished; I will not call to remembrance the instances of sons of princes being starved to death behind iron bars, nor of the young nuns who were buried for life within the narrow space enclosed by four walls—crimes which could not be committed at the present time. I will only take examples which have been fully established by indisputable evidence. An innocent girl was burned "as a sorceress" because she had red eyes; an equally innocent young man, because he would not plead guilty to a crime falsely imputed to him, had the thumb-screws applied till the blood spurted from under his nails; for a similar reason was a girl burnt with torches on the breasts and armpits; while a third, probably falsely accused, was placed upon the rack, and his limbs torn from their sockets. A citizen of Munich was burnt alive, three hundred years ago, because he had carnations in flower in the month of February, this being looked upon as witchcraft. I myself know of the case of a learned man, whose name is still famous, who was kept in confinement in the New Tower of Munich for seven years, because it was thought he had circulated a seditious placard. During these seven long years his father and mother went sorrowing to their graves; the prisoner himself was allowed neither books nor music, and was almost in despair; his sister's intended husband withdrew from his compact, as he did not wish to have a criminal for a brother-in-law; a brother of the prisoner, who was just going to be appointed to the office of assessor, was rejected on account of his relationship to the accused. Then, after these seven dreadful years, it was ascertained that the young man was perfectly innocent, and he was presented with his liberty.

It is, therefore, noteworthy that such horrors as existed in the past no longer occur in any civilized country. Just look around! It is now impossible to immure a nun for life; people cannot be carried away and no trace of them left, as formerly used often to happen; no young woman can be burned to death because she has red eyes; nor citizens, because their carnations are in bloom in February; no one is tortured on the rack in order to extort a confession of guilt; nor can an innocent person be kept in prison for seven years.

In the *German Penal Code*, s. 343, we read: "Any official who, in examinations, employs or causes to be employed coercive measures in order to elicit a confession or declaration, will be sent to the house of correction for a period of five years."

The frightful tortures which were employed to extort confessions of guilt, naturally often caused, by their dreadful wounds, permanent injury to innocent people.

Nowadays, when a judge wishes to imprison a culprit for a few days only, a medical man is sometimes called in, and his opinion taken as to whether the person can undergo the sentence without injury to his health.

It is considered necessary now to exercise great care. When one thinks how the houses of correction are ventilated according to scientific laws; how the dietary of the prisoners, and the means for supplying the necessary warmth to the prisons, are calculated; when one sees that as much attention is paid to prisoners as to honest poor people, one would almost believe that men are trying to bring back the "Golden Age," when the goddess Astræa induced men to lead happy lives, and taught justice and moderation to live together amicably. Such humane attention is now considered proper. Mighty time, which changes everything, alters also the mode of administering justice, and does not leave even truth undisturbed. What was looked upon as truth ten years ago is no longer considered so; and some opinion the correctness of which no one at present doubts will perhaps, ten years hence, be proclaimed as utterly false.

Allow me to give you a single example from our science, to illustrate what I have said. That great scholar Philipps von Walther asserted that it was an impossibility for any man to see the deeper parts of the eye. He founded this statement upon the fact that the eye is a "camera obscura;" it is like a chamber with one window, and this window, as seen from without, appears always black, and does not permit of the remote parts of the room being seen. No one disputed this statement of Walther's; but scarcely was he laid in his grave when the ophthalmoscope was invented, and the deeper parts of the eye explored with almost mathematical exactness. The first step was to reflect light into the eye by means of a mirror, then the silvering was removed from a small portion of the back of the mirror, and so, while the rays of light reflected from the mirror lit up the interior of the eye, the structures could be conveniently examined through the transparent part of the mirror.

Dieffenbach, the bold German operator, wrote in 1842, "It is unjustifiable to cut into the abdominal cavity in order to take out a diseased ovary. The organism will not tolerate such interference." Dieffenbach had only been a short time dead when ovariotomy produced splendid results in England; and now Keith performs fifty successive ovariotomies with only one death. A very modest calculation shows that through the ovariotomies successfully performed in England, France, and Germany, more than 30,000 years of life have been spared to the human race.

A few decades since it was considered that wounds of the intestine were invariably fatal; no one dared to put in stitches. Now the intestine is drawn out of the abdominal cavity, diseased portions to the extent of 10–12 cm. are taken away, and the healthy parts brought together. The bowel, carefully protected, is left outside the abdominal cavity for, perhaps, a few days, until it is soundly healed, and then it is returned into the abdomen. Thus it cannot now be affirmed with truth that wounds of the intestines are necessarily fatal.

It is not so very long since a suggestion made by the surgeon Carl Theodor Merren to remove cancer of the stomach was looked upon as "a beautiful dream of youth." However, Professor Czerny demonstrated practically, four years ago, that a person can continue to live after the whole stomach has been removed. He cut out the entire stomach, and stitched the œsophagus to the intestine, and the digestive functions were carried on very well, and the patient had good health.

Dozens of such examples might be cited to show that what was a short time since considered as an indisputable fact has now no value. But a consideration which has always been of the utmost importance with regard to the risks and ultimate results of all wounds and operations has changed very much of late years, and this reform has been so great, both in the treatment of cases and in the recognition of existing risks, that I cannot see how forensic medicine can any longer ignore this reformation in surgery. Some of the leading medical jurists have already directed their attention to the subject, but this is not enough if no laws or regulations define how far one can and must pay attention to this reformation.

This reformation in surgery is so far matured that Themis might safely uncover her eyes once more. As the impartiality of the judge's vocation has become almost a sacred thing with us, we have nothing to fear if the goddess should take a searching glance around.

You know that only a few years ago the opinion was held that the fever which followed wounds or operations, the painfulness and the inflammation of wounds, the disturbance of the whole system, the high temperature, the rapid pulse, the loss of appetite, —in a word, all the conditions observed after a wound or operation, —were to be considered as "reflex action" of the organism, and as an inevitable "wound-reaction."

Billroth's novel dictum—"In patients with wounds all general and local disturbances originate in the decomposition of the wound products, and the fever and inflammation produced therefrom; all the consequences described above are wanting when there is no secretion shut up between the edges of the wound, or at least no foul-smelling secretion,"—has entirely overturned the whole "reaction" theory, and careful observation has confirmed this new view to such an extent that it has become an indisputable fact.

Further proofs of this have been given by the experiments of Pasteur and Lister. These have also shown that the putrefaction of the secretions of a wound does not arise within the organism, but the mischief is brought about by external agencies; also that it is not the entrance of air alone which generates the putrid fernentation in the secretions of a wound, but that the particles of dust, fungi, etc., which are floating in the surrounding air must be blamed for originating putrefaction.

The views which have just been stated are no longer contradicted by any one; at least every surgeon believes that external influences cause putrefaction of the secretions. There are still some, however, who think that external influences are not exclusively the cause of the putrefaction, but that it may also arise within the organism.

Then came, during the last few years, Lister's great discovery. Lister's object was to find means by which the causes of putrefaction which have just been mentioned could be kept out of wounds or rendered inert. Now was brought about that great surgical reformation which has guided our observations and our treatment during the last few years By following the directions which have been given we can now get results every day which would have been looked upon as quite impossible a few years ago. Not only have pyæmia, hospital gangrene, and erysipelas been banished from unhealthy hospitals, not only has the mortality in the surgical sections been reduced by one-half, but we have also learned that large, severe wounds can heal up without any constitutional disturbance, pain, or rise of temperature. This last-mentioned result has also converted some men who, through unusual care in their operations and modes of dressing, had obtained excellent results before this reformation, to the recognition of the value of antiseptics, because they were obliged to confess that their earlier results, although very favourable, would not bear comparison with those of the disciples of Lister, and because they had never previously seen a great operation case run a favourable course without reaction or fever, as one so often sees when antiseptic principles are carried out. In the case of small wounds one has certainly often seen, formerly, progress without any fever, but this was a matter of chance and not under the control of the surgeon; it might be observed in three successive cases, and then be wanting in the next five or six.

Herein lies the great difference. It is no longer a matter of chance, but we know for certain that we can obtain progress towards recovery quite free from risk if we exclude the operation of putrefactive agencies from the wounds. But the knowledge of this fact, which has been a great discovery, entails also considerable responsibility. When it has once been demonstrated that "wound-reaction," which is often such a serious thing, can be avoided, then it follows as a necessary consequence that the omission of antiseptic precautions is carelessness.

This discovery also leads to quite a new era in surgical practice as regards the conditions in which we may interfere, and when we should refrain from it.

The great reform which surgery has experienced through all that we express in the word "antiseptic," and which has already been highly appreciated, makes certain claims upon the medical jurist which cannot be overlooked, and also demands certain positive and negative duties from the practitioner which may not be shirked.

In order to bring this clearly before you, and to prove that it is now sometimes absolutely necessary to forbid as wrong and dangerous that which, a few years ago, was done by every one, and considered quite right and useful, let me quote a few illustrative cases. You will thus also have an opportunity of learning that the laws and prohibitions which are binding upon the practitioner of legal medicine are not very hard.

When, a few years ago, a busy medical jurist made, at two o'clock in the afternoon, an autopsy on the half-decomposed body of a child found in a ditch; at four o'clock, a post-mortem on a student who had died of pyæmia following a wound in the head received in a duel; then had washed his hands carefully with soap and water and gone into the hospital, where he made a careful examination of a young lad, in the presence of the hospital surgeon, who was in some doubt as to the depth of the abdominal wound,—no one would have thought that this medical jurist had done anything wrong, risky, or dangerous, but all would have thought that he had discharged his duties in a careful and conscientious manner.

I shall relate to you a second example:—In the year 1856 I went one morning at nine o'clock to the clinic of the world-renowned Nélaton at Paris. Every one was eagerly expectant, for a young man who had received a stab on the buttock, causing an aneurism of the gluteal artery, was going to be operated upon on that day by Nélaton, as it was feared fatal rupture might soon occur. Nélaton came to the anatomy-room, gave an exceedingly learned lecture on the subject of aneurism, described the difficulties in the case under consideration, demonstrated on two dead bodies the method of operation he had resolved upon following for the case, then carefully washed his hands, accompanied us to the operating-room, performed the operation upon the patient in a splendid manner, and was enthusiastically applauded by us, according to Parisian fashion. Unfortunately, the patient died ten days afterwards from pyæmia, although Nélaton's operation had successfully warded off the rupture.

Did any one imagine that there had been any fault in Nélaton's practice? On the contrary, every one spoke loudly in praise of the brilliant thinker and the skilful operator.

These examples show you what was formerly considered quite right and proper.

What would be the opinion given on this point to-day, gentlemen? Would not one cast bitter and well-merited reproach at, or even make a definite accusation against, the person who was guilty of such carelessness?

Listen to what is done nowadays. When any one wishes to be present at an ovariotomy in Billroth's clinic, he must sign a paper stating, on his word of honour, that he has not been in a post-mortem room for several days. You see how differently people think of this matter now. You do not think that Billroth's demands are ridiculous? Can you imagine that Billroth, whose name is spoken with respect and praise in all parts of the world, would make a foolish, meaningless regulation? Rest assured that this preventive measure has been duly considered.

Spencer Wells of London adopts still further precautions. He requests that those who wish to be present at one of his operations will not do any anatomical work for some days before the operation, nor touch a dead body nor any case of infectious disease, and that they will put on fresh linen, etc. This is what is requested of those who wish to witness an operation. Those who take part in the operation must observe still stricter precautions. Concerning the practice followed by Professor Hegar in Freiburg and Professor Schröder in Berlin, one reads that the operator and his assistants and attendants, before an ovariotomy, take a cleansing bath, put on newly-washed clothes, carefully disinfect the hands and arms with carbolic acid, and, naturally, carefully avoid anatomy for some days beforehand. What such men so urgently advise and so conscientiously carry out must be looked upon as the outcome of accurate observation and experience. The results obtained by these operators are proof sufficient of the correctness of their practice.

In the times of which I have spoken, when one did not think there was any harm in going direct from the post-mortem table to the sick-bed, almost all cases of penetrating wound of the abdomen, however small the wound, died of peritonitis. Now can an incision 30 cm. long be made in the abdominal walls, the intestines pulled out, a tumour of 25 lbs. weight removed, the intestines carefully cleansed and replaced, and the abdomen sewn up. The patient can recover without any constitutional disturbance, pain, or fever. The temperature is often not raised one-tenth of a degree. This, I say, is a proof that the present method is the correct one, and that the old one was faulty.

The celebrated Nélaton would not now venture to demonstrate an operation upon the dead body, and then perform it immediately afterwards upon the living. Formerly this was considered as not at all improper, but as being a very useful practice. Such a proceeding must now, however, be strongly condemned. Formerly many cases died from pyæmia, but we can now operate freely without any fear of such a result. We know that by carefully following antiseptic principles we can prevent accidental wound-diseases from coming on. The objections raised by many in the profession, that this reform in surgery is very valuable for unhealthy hospitals, but that it is unnecessary where one can get pure country air, have no foundation in fact, because, although accidental wound-diseases were more common in hospitals, yet they did occur, and still do occur, where the purest country air exists, although they are of less frequent occurrence. I have seen in the purest mountain air cases of compound fracture die of septicæmia, cases which would now run a favourable course in my hospital wards.

No one denies that these unfavourable results are of rarer occurrence in country practice than in towns; nevertheless it is all the same to the person who suffers from it whether he is the tenth or the twentieth who dies from an accidental wound-disease which might be prevented by care. Another idea which is also quite false is the notion that the hands can be rendered sufficiently clean by the use of soap and water to enable one to touch a wound without risk to the patient. The soap itself can contain elements of putrefaction, and in the water there are perhaps myriads of septic germs. To make the hands pure in a surgical sense, an antiseptic agent of undoubted efficiency must be employed, and the most appropriate one is a five per cent. solution of carbolic acid. A solution of this strength renders all putrefactive organisms inert, and forms innocuous emulsions with oily and fatty substances. One touch of a wound with a finger which is not surgically pure may lead to a fatal result. There is no exaggeration whatever in this statement. A small blood-clot may be lying in a wound; this may be disturbed by the finger which carries putrefactive matter; putrefaction and decomposition ensue, and the products of these processes may find entrance into a wounded vein, and thus be carried to other parts of the body, and the patient dies with symptoms of septicæmia. We see, then, the truth of the following statement made by Professor von Bergmann in his excellent work upon the Russo-Turkish war:—"It is necessary that all the medical staff should understand and follow the rules of antiseptic surgery, for a single finger-tip can spoil the best results."

The argument that excellent results were obtained before all these precautions were thought of, in the country especially, has no value, because no one has ever thought or said that every wound which is touched with a finger which has not been disinfected becomes septic and runs an unfavourable course. If this were the case, then before the discovery of antiseptics must every wound have been septic and every case of severe wound have died. No person would think of saying that these unfortunate results invariably follow when a wound is touched with hands or dressings which have not been disinfected. It is quite enough when one can say with truth that a wound may be rendered septic by touching it with a non-disinfected finger, and, on the other hand, "that one can *certainly* avoid all 'sepsis' in wounds and all accidental wound-diseases, and the fatal results so often caused by these, by observing antiseptic precautions." It is in the certainty that the strength lies; this constitutes the greatness of the discovery, but it also leads to great responsibility.

From all this, the truth of which has been indisputably proved, it follows that there are many duties incumbent upon the practitioners of legal medicine which they must no longer delay attending to.

When you read in Casper's *Practical Handbook of Legal Medicine*, which Councillor von Liman has recently revised, vol. ii. page 789, that "medical men are not only held responsible for malpraxis, but also for what they neglect to do through carelessness," you will see that this is quite in accordance with the position I have taken up. Further, you will find in Oppenhoff's *Penal Code for the German Empire*, 1872, section 222: "Whoever causes the death of a person through carelessness will be punished with imprisonment for three years;" and in the note 4 you read also: "This death must be caused by a careless act, or by an omission. It is not necessary, however, that this act or omission be the sole cause of death; it can also work along with some other cause which the accused person has not been instrumental in producing." Also, in section 230, you find: ("Personal injury" includes everything which impairs health): "Whoever, through carelessness, causes injury to the person of another, will be punished with a fine of 200 thalers, or with two years' imprisonment. If the accused person was pledged to the carefulness which he lost sight of by virtue of his office, profession, or business, then the punishment can be increased to three years' imprisonment."

What do you say to this paragraph, when you know for a certainty that accidental wound diseases often lead to the death of cases of head-injuries, when you know that, by carefully carrying out the principles of antiseptic surgery, these can certainly be avoided? Does not number 230 of the New German Penal Code apply closely to the case where a medical man treats a head-injury after the old methods, with ointment or sticking-plaister, examines the wound with a non-disinfected probe or finger, and the patient gets erysipelas of the head, with symptoms of meningitis following, and ultimately dies, as the result of this? This mode of death is never seen if the cases of head-injury come at once under the care of a conscientious antiseptic practitioner; can we not appropriately apply here the words, "if the accused person was pledged to the carefulness which he lost sight of," etc., etc.? I am not only convinced of the importance of what I have said, but I also believe that the right time has come to speak out freely about it. What would be thought now of the conduct of a medical jurist who made an autopsy on the decomposing body of a child at two o'clock, another at three o'clock on the body of a person who had died from pyæmia, and then washed his hands and went into the hospital and examined a case of penetrating wound of the abdomen? Formerly no one considered that there was anything wrong in this. But now, when it is requested that those who only wish to witness an operation will not touch a dead body nor an infectious case for some days before, such conduct must be condemned; and since the excellent results which are now obtained prove the soundness of the views held, so is it urgently demanded that people should be cautioned against such errors by definite regulations, so that if a patient is exposed to a risk which might be avoided, or if he does not get that treatment which experience has shown to be certainly able to restore him, then may a charge of carelessness be justly brought against the practitioner who has charge of the case, or the medical jurist who examines it.

Councillor Liman, in his excellent work on *Legal Medicine*, suggests the following:—"One might often accuse homœopathy of carelessness, because of the neglect to employ important and active measures of cure." I do not think, however, that one can go so far as this, for it would be difficult to find a case in internal medicine where one could say positively, "If a certain form of treatment is adopted here, this or that danger to life will be obviated." If one could speak thus definitely about diseases and their appropriate remedies, then would the charge of carelessness against the practitioners of homœopathy and hydropathy be justifiable. But this is not the case. On the contrary, the rate of mortality among cases treated on allopathic, homœopathic, or hydropathic principles is, on the whole, much the same. In the cholera epidemic of 1854, for example, the three methods of treatment were attended with an almost similar death-rate. What room would there be in such a case for a charge of carelessness? But in the matter of antiseptic surgery the case must be stated very differently. The mortality among cases treated by the antiseptic method is much less than among those treated according to the older plans of dressing, etc. In my surgical clinic the death-rate has been reduced by one-half since the introduction of antiseptics. The cases which now end fatally are chiefly those suffering from tuberculosis, carcinoma, severe crushing or burning, marasmus, cases of suicide, etc. It no longer happens that strong young men who come into hospital on account of injury die of pyæmia. Head-injuries, which formerly contracted erysipelas, and very frequently died from secondary meningitis, now heal up in a few days without any of these complications. Cases of severe wounds, which formerly had fever of several weeks' duration, along with profuse suppuration, and frequently died of pyæmia, now heal up in a few days without fever, constitutional disturbance, or risk. The mortality among cases of injury has fallen almost to *nil*. Head-injuries had formerly a frightful mortality in this hospital. A great number of those pugilists whom we have among us now, who receive head-injuries from blows with measuring-jugs, or murderous strokes on the head, formerly often died from purulent meningitis; now they all leave the hospital, quite recovered, in 14 to 20 days; and all this is no chance, but, if the case comes at once into the hands of an antiseptic practitioner, we can say for certain, if no mistake is made here, then no unfortunate result will follow, no erysipelas, no prolonged suppuration, nor high fever, but the case will run a safe and satisfactory course.

This same certainty as to the results increases the weight of the responsibility. Medical jurists, who have had repeated proofs of the truth of what has been said, have often, in open court, to discuss cases which have not run this favourable course. I believe, however, that the time has now come when these matters should be put on a more settled footing by legislation.

At one of the last sittings of the criminal court there was the case of a student, a healthy young man, who had died from secondary meningitis, coming on after a head-injury caused by a blow from a cudgel. His companion, a military surgeon, had not neglected the case, but had treated him very carefully according to the old-fashioned methods. The wound was washed with cold water and sewn up with silk. For the first four days all seemed to be going on well; on the fifth day came fever and some erysipelas; on the seventh day a rigor; and a few days afterwards delirium came on, due to a sympathetic inflammation inside the skull; on the eleventh day the patient became comatose and died. The autopsy showed meningitis with purulent exudation. The medical jurist stated in court, quite correctly, that "death was due to meningitis, the result of septic inflammation, which commenced in the wound, and spread by continuity to the inside of the skull." Had the wound been treated antiseptically, all this would have been impossible. If the wound had been washed immediately with an antiseptic lotion and sewn with carbolized silk or catgut, an antiseptic drainage-tube put in, and an antiseptic dressing applied, there could have been no inflammation, erysipelas, or rigors; we know this from everyday experience.

(To be continued.)

ARTICLE VII.—*Clinical Lectures on Intra-Cranial Tumours.* By BYROM BRAMWELL, M.D., F.R.C.P.E., Lecturer on the Principles and Practice of Medicine and on Practical Medicine and Medical Diagnosis in the Extra-Academical School of Medicine, Edinburgh; late Physician and Pathologist to the Newcastle-on-Tyne Infirmary; formerly Lecturer on Clinical Medicine and on Pathology in the University of Durham College of Medicine, Newcastle-on-Tyne, etc., etc.

LECTURE II.

(Concluded from page 833.)

Tonic spasms are much less frequently met with in cases of intracranial tumour than the clonic form which I have just described.

They (tonic spasms) usually result from pressure on, and direct irritation of conducting (motor) fibres; or from discharge of lower (as distinguished from higher, *i.e.*, cortical or cerebral) nerve centres in the medulla, pons, or cerebellum. In fact, as a matter of experience, we know that when tonic spasms are due to the presence of an intra-cranial tumour the growth is in the vast majority of cases subtentorial,[1] and is usually situated in the cerebellum.[2]

The distribution of tonic, like that of clonic spasms, varies in different cases. In some they are limited to the muscles of the neck, producing retraction of the head; in others the muscles of the limbs and face are involved, as in the following case:—

Case VII.—A. C., æt. 9, was admitted to this Infirmary, under my care, on 24th January 1878, suffering from headache, blindness, and deafness. She had enjoyed good health until four months previously. One day, while at play, she was thrown violently against a stone wall, and received a severe blow on the back of her head. The injury was followed by headache and vomiting. For some days she was confined to bed, and she has never been well since. The headache has been very severe; it used to come on three or four times a day, and was generally referred to the frontal region. She was in the habit of holding her head under the cold tap, as she found that this was the only thing which gave her relief. A week before admission she *suddenly* lost her eyesight, and the next day her hearing. She has not been feverish, nor has she had any shiverings or convulsions. Though quite blind and apparently quite deaf, she seemed bright and intelligent. She could readily distinguish her mother by the "feel of her dress," and in a short time could recognise the nurses in the same manner. Double optic neuritis was well marked. The external ears were natural; but hearing, both to aerial and skull sounds, seemed *nil.* There was no paralysis. The gait was somewhat uncertain, but not more so than could be accounted for by the recent loss of vision. She remained in the Infirmary until her death, which took place on 23d June. During the course of the case periodical attacks of headache and vomiting occurred. She was every now and again seized with convulsions; the *spasms were generally of a tonic character*, and the muscles chiefly affected were those of the head and neck, both eyeballs, and both upper extremities. Consciousness was not lost during these attacks. At the autopsy a large scrofulous tumour was found in the right lobe of the cerebellum.

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[1] This statement applies more particularly to tonic spasms affecting the limbs or trunk. Tonic spasms of muscles supplied by cerebral motor nerves may theoretically be due to direct irritation of the nerve trunks within the cranial cavity, as, for example, when a tumour situated at the base of the brain presses upon the seventh or other motor nerve trunk with which it is in contact. I may remark, however, that in actual practice the usual result of such pressure is paralysis, not spasm.

[2] Dr Buzzard has recently recorded a case in which a tumour (glioma) in the right tempero-sphenoidal lobe was attended by "cerebellar rigidity."—*Brain*, April 1881, page 130.

The exact manner in which lesions of the cerebellum produce tonic convulsions of this description is still undecided. Dr Hughlings Jackson, Dr Stephen Mackenzie, and some other authorities, think the spasms are due to a "discharging lesion" of the cerebellum itself. Others, as, for example, Professor Nothnagel and Dr Althaus, say that the cerebellar lesion (tumour) produces the symptoms by pressing upon and irritating the subjacent motor tracts in the medulla.[1]

Before leaving the subject of "discharging lesions," let me tell you that such lesions *always* give rise to symptoms (spasms and convulsions). In this respect "discharging lesions" differ very materially from "destroying lesions," which we will now consider.

Paralysis.—This is one of the most common symptoms in cases of intra-cranial tumours, and may be either organic or functional (epileptiform). When a tumour presses upon a motor centre, a motor tract, or a motor nerve trunk, so as to destroy it or to arrest the generation or conduction of motor nerve force, diminution of function will result, and will (under ordinary circumstances[2]) be manifested externally as paralysis.

The following is a case in point:—

Case VIII.—The patient, a woman æt. 24, was recently admitted into this Infirmary (under the care of my colleague Dr Philipson, who has kindly allowed me to make use of the case), suffering from paralysis of the left arm, left leg, right side of the face, and right external rectus muscle. She died soon after admission, and on making a post-mortem I found that all the organs of the body, with the exception of the pons varolii, were healthy. A considerable part of the right side of that most important structure, at the level of the seventh nerve, was destroyed by the tumour which I now show you. It is, you will see, about the size of a cherry. It has evidently invaded the motor tract passing to the left arm and leg, and has pressed upon and destroyed the sixth and seventh nerves on the right side, just at their point of emergence.

This case, then, is an excellent example of the fact that destruction of motor nerve-tissue produces paralysis. How, then, was it, you may ask, that in some of the cases you have brought before us (notably in Case III., in which the motor region of the cerebral cortex was extensively destroyed), there was no paralysis? The apparent anomaly is explained by the theory of compensati which supposes that, where a cortical centre is slowly and gradually destroyed, its function is taken up and carried on by adjacen centres in the same hemisphere, or possibly by correspondin centres on the opposite side. In order that you may thoroughly understand the very important fact that "discharging lesions" of necessity cause spasms, while "destroying lesions" do not o necessity cause paralysis, allow me to give you a simple illustration.

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[1] It must not be supposed from this description that tonic convulsions only result from subtentorial *tumours*. Any irritation in the same region may produce them. Meningitis involving the posterior parts of the base is a common cause of retraction of the head, and in some case of general tonic convulsions closely resembling a tetanic fit. (See a case recorded by me in the *Edinburgh Medical Journal*, Aug. 1879, p. 142.)

[2] In cases of slow and gradual destruction of motor generating centres, there may be no paralysis (see page 1006).

Take a peal of, say, eight bells; let each bell be of a different weight and tone; to each bell is attached a rope, and each rope is pulled by a separate ringer, who has been trained to his special work. (The bells = the muscles; the bell-ropes = the conducting motor fibres; the ringers = the generating cortical motor centres; the result produced by the combined action of the different ringers = a co-ordinate muscular act.) Further, suppose, if it be possible, that each bell is so hung that the slightest pull is sufficient to produce a sound. If, now, during a state of rest, any ringer pull, be it ever so slightly, a sound is of necessity produced. (Discharge of any cortical motor centre, the conducting motor strands and muscles being healthy, of necessity produces symptoms, *i.e.*, muscular movement or spasm.) If, again, any given ringer be suddenly put *hors de combat*, his bell will be soundless. (Sudden destruction of any given cortical motor centre will cause paralysis of the movements represented in that centre. The same thing, *i.e.*, paralysis, will, of course, result if the conducting fibres, *i.e.*, the bell-rope, or the muscles, *i.e.*, the bell, be destroyed.) But suppose that one of the ringers, instead of being suddenly disabled, is the victim of some slow and progressive disease, which gradually weakens and ultimately kills him. In such a case it is quite conceivable that his neighbours, who are aware of his condition, may be able to make such arrangements and to educate themselves in his special duties so that they are gradually able to take on his work, with the result that when he succumbs his loss will to all intents and purposes be unperceived. (Slow destruction of a cortical motor centre does not, then, of necessity give rise to symptoms.) But, further, it is easy to conceive that this substitution will seldom, if ever, be quite perfect, and such is the fact in actual disease. Destruction of an active motor centre (in the adult, at least) is seldom completely compensated. The coarser movements may be well enough performed, but the finer ones are rarely carried out with perfect accuracy and precision.

In the case of paralysis I have just described (Case VIII.) the loss of power in the left arm and leg was due to pressure on and destruction of the conducting fibres above their trophic nuclei, and was, therefore, strictly *central*. The loss of power in the muscles supplied by the sixth and seventh nerves (right external rectus and muscles of the right side of the face) was due to pressure on the nerve trunks themselves (*i.e.*, the conducting fibres below their trophic nuclei), and was therefore *peripheral.* In addition to these two forms of organic paralysis (central and peripheral), we not unfrequently meet with temporary loss of power evidently due to functional changes. In the great majority of such cases the paralysis follows an attack of spasms, and is evidently of the epileptic variety to which I have already referred (see p. 830). But in some cases the paralysis occurs independently of convulsions. I shall presently relate a case in which the onset was sudden, unattended by any spasm, and in which consciousness was retained. In that case the paralysis was probably due to "sudden inhibition" of motor cortical centres. In the following case, in which there was loss of consciousness, the paralysis more closely resembled the ordinary epileptic type.

CASE IX.—A sailor, æt. 23, was admitted to this Infirmary, under my care, on August 29, 1875, suffering the usual symptoms of intra-cranial tumour (headache, vomiting, and double optic neuritis), which, from the history of the case and the presence of well-marked external manifestations (old iritis and the cicatrices of tertiary ulcers in various parts of the body), was doubtless syphilitic. Epileptiform convulsions frequently occurred. Some of the seizures were slight; in them the muscles of the face and tongue were the parts affected, and there was no loss of consciousness. Other seizures were severe. The spasms, which commenced locally, ultimately became bilateral, and were attended by loss of consciousness. After the severe attacks *post-epileptic* paralysis was usually observed. On *September* 10*th* an attack of a different kind occurred. The patient suddenly fell off his chair unconscious, and remained so for two hours. *The attack was not attended or preceded by convulsive spasm.* When he came to himself he could not speak, and was unable to move the right arm, right leg, or right side of the face. I saw him eight hours after the attack. He was then beginning to regain motor power, and could say a few words. On *September* 12*th* he was very much better; the paralysis had almost passed off. On *the following day* it had disappeared.

ARTICLE VIII.—*Part of a Clinical Lecture on the Operations from 1st November* 1880 *to* 31*st March* 1881 *in Mr Joseph Bell's Wards.*

Reported by J. MAXWELL ROSS, L.R.C.S. Ed., House Surgeon.

FROM 1st November to 31st March there have been 102 operations. Of these 97 have recovered, 5 have died. There have been 24 amputations, with 1 death. The case which died was that of a miner, John Hayden, æt. 32, who received a compound comminuted fracture of both bones of the leg on 11th November at

West Calder. He was brought into the Infirmary in a state of shock and collapse, in which amputation of the thigh was performed, but he never rallied, and died within 18 hours of his admission. Two of the amputations—one of thigh and the other of the arm—were done under somewhat disadvantageous circumstances, but both recovered perfectly. The amputation of the thigh was performed on a man, Andrew Randall, æt. 46, who suffered from long-standing disease of the knee-joint. There was no cardiac affection, but he had an uncomfortable tendency to syncope, which rendered the prognosis less cheerful than usual, and made the use of chloroform inadmissible. Ether was given by Dr Dickson, and he recovered rapidly from the effects of the operation. The case of amputation of the arm was that of a man, old for a surgical operation, and one who looked older than he really was, James Eadie, æt. 53. He had long-standing disease of the right elbow-joint, and had been of very irregular habits in his youth. His age, appearance, history, and the extent to which the bones were involved, made excision of the joint inadmissible. Though there was no cardiac affection, it was deemed the safer plan to give him ether also, which Dr Dickson kindly did. The operation was performed on 16th March. He made a rapid recovery, was up on the twelfth day, and the wound was soundly healed on April 3d.

One of the Syme's amputations, that for congenital club-foot (talipes varus), was done at the request of the patient, on account of the extreme pain she suffered in walking. She made a very good recovery.

There were 2 excisions of joints, shoulder and elbow.

Of the 41 tumours removed, 27 were malignant, 14 were simple. Of the 27 malignant, 11 were scirrhous tumours of the breast, 8 were epitheliomata, the remaining 6 were sarcomata, and one of these sarcomata occurred in the male mamma. The patient, æt. 50, was a fisherman from Shetland. The tumour was of four months' duration, and had grown rather rapidly. Of the scirrhus cases 10 recovered, 1 died.

As death after excision of mamma is a very rare result, and as this case was a most remarkable one, possibly related to the carbolic dressings, I give it somewhat fully.

The patient who died was a woman æt. 44, admitted to hospital 14th February 1881. The tumour was a small one of twelve months' duration. The breast was perfectly mobile over the chest wall. There was no involvement of the skin, and no glandular enlargement. Patient was a healthy country woman, and the prognosis seemed very favourable. On 18th February the breast was removed under antiseptic precautions. She was a little sick in the afternoon from the chloroform, but otherwise did not complain. She had no pain and slept well. Temp. 99°·8; pulse 88.

February 19th.—Patient complained she could not pass her vater. Relieved by catheter of about 25 ounces of dark smoky rine. Wound dressed, looking well. Temp. in evening 100°·2; ulse 80. Catheter again passed at night; urine smoky.

20th.—Catheter again passed; urine smoky. Wound dressed; o appearance of tension, and looking well. Temp. in evening 01°·2; pulse 88. Catheter again passed; urine still smoky.

21st.—Catheter again passed; urine less smoky. No discharge hrough dressings; wound not dressed. Temp. 99°·8. *Evening.*—atheter again passed; urine still smoky, but less so than in orning. Temp. 100°·2.

22d.—Catheter again passed; urine slightly smoky. Wound not dressed; no discharge. Temp. 98°·6. *Evening.*—Catheter gain required; urine still smoky. Temp 98°·4. Patient says she feels much better; complains of irritation about the genitals.

23d.—Able to make water herself. Temp. 101°·2. Wound dressed; some of the stitches removed; looking well. *Evening.*—Temp. 100°·2.

24th.—Wound not dressed. Urine more smoky than yesterday. Temp. 101°.

25th.—Wound not dressed; no discharge. Urine still smoky, and somewhat turbid. Temp. 101°·4. To day she was visited by some members of her family, and seemed to have had a quarrel with them. Very irritable, and did not sleep well.

26th.—Wound dressed; no discharge, but on account of high temp., 103°, it was thought better to dress it. No tension, looking well, and healing kindly. Patient began to have delusions to-day. Saw objects before her which had no existence. KBr ordered.

27th.—Carbolic dressing changed to boracic; remaining sutures removed. Temp. 102°·4 in evening. Slept better during night.

28th.—Patient's temper very irritable; delusions regarding herself and friends. Seen by an expert, who thought she was on verge of an attack of mania. Temp. 104°·6. KBr continued. Temp. still went up, and in evening was 107°. Died about 7.30, having sunk rapidly since 6 P.M. Temp. 107°·2.

Post-mortem Examination.—*External appearances.*—Height, 60 inches; circumference at shoulders, 35¾ inches. Body poorly nourished; rigor well marked; lividity well marked on dependent parts, tips of fingers, and lips. Incision for removal of the right mamma. Wound almost entirely healed. An opening for a drainage-tube at lowest extremity with a little pus in it.

Heart healthy; both sides nearly empty, and flaccid. Ascending aorta healthy.

Lungs healthy, with the exception of extreme congestion and probably hæmorrhage at the base.

Liver healthy.

Kidneys.—Left weighed 5 ounces. A cancerous tumour, the

size of a pea, and wedge-shaped, in cortex. Cortex anæm
Right healthy, but anæmic.

Spleen weighed 3¾ ounces. Slightly congested.

Head.—Brain weighed 3 lbs. 1¾oz. Vessels at cortex congest A considerable quantity of subarachnoid fluid at vertex and bas otherwise healthy.

Uterus.—Cervix extremely hard, almost cartilaginous; probab not cancerous.

Bladder.—Mucous membrane intensely congested, especially i vicinity of cervix, and thrown into rugæ, having a dark-re intensely congested appearance. On the surface of these ther were a few gray patches diphtheritic-like in their appearanc In other parts there were a few punctiform hæmorrhages

It is almost impossible to avoid connecting this remarkab condition of the bladder with the very markedly and persisten smoky condition of the urine which is so frequently seen i connexion with the use of carbolic acid spray and dressings.

The case of sarcoma of the upper arm occurred in a woman æt. 60. A tumour had been removed from the same situati nearly two years before. The case was interesting from th involvement of the ulnar and internal cutaneous nerves. Tw inches of each were removed along with the tumour, and eight pl of chromic acid catgut used as a suture to bring the proximal and distal ends together. She had paralysis of sensation in the little finger and ulnar half of ring finger, but two days after the operation complained of stounds of pain, though there was still anæsthesia, probably due to irritation of the proximal end of the nerve. She left hospital on the eighteenth day after the operation with the wound soundly healed, but the parts supplied by the ulnar nerve still paralyzed as to sensation.

Of the remaining operation cases 3 died—one a tracheotomy, performed by Dr Turner, for diphtheria in a little boy. He died three weeks after operation, of post-diphtheritic paralysis. The two others were cases of strangulated hernia.

First was a woman named Christina M'A., æt. 48, admitted at 12 A.M., 18th November. Had suffered from constipation for 14 days. Great pain in abdomen. Constant vomiting of stercoraceous matter. Hiccup and collapse. A tumour found in left groin. Cut down on, and a quantity of putrid pus evacuated. Evidently a hernial sac adherent, and communicating with a suppurating peritoneum. The bowel was gangrenous and ruptured; it was opened, and edges stitched to the wound with catgut.

Post-mortem Examination.—External appearances.—Height, 59 inches; circumference at shoulders, 36¾ inches. Body fairly nourished; lividity considerable. An incision, 2½ inches long, running immediately under Poupart's ligament on left side. Stitched with catgut to edge of sac.

Abdomen contained 30 ounces of very thick, gray-coloured, urulent fluid. A loop of small intestine was found in the wound. here was an opening externally admitting the forefinger; edges f this opening stitched to those of the wound with catgut. The op of intestine was adherent to the canal, and was considerably ongested. Other organs comparatively healthy.

Second was a woman named A. T., æt. 49, admitted 25th November, with a strangulated inguinal hernia. The bowel had een down for more than ten days before she came in. The bdomen was full of the products of inflammation. Stupes and listers had to be put on after the operation. The extrardinary tenacity of life shown by this poor emaciated creature, with a suppurated peritoneal cavity, was most remarkable, as she lived for sixteen days, in a case apparently quite hopeless, with an mperceptible pulse, and a fœtor of breath and exhalations almost insupportable by nurses and bystanders. She died on 10th December of exhaustion. No post-mortem was allowed.

Of the other operation cases only one gave much trouble. It was a case of excision of the eye-ball for malignant tumour in a man of hæmorrhagic diathesis, which was not made out till after the operation. The oozing was stopped with some little difficulty by means of a plug. Two days after the plug was removed, but the bleeding was so profuse that the wound had to be replugged. On the second occasion of removing the plug the bleeding was again so profuse that perchloride of iron had to be applied locally, ergotine injected twice subcutaneously, and a plug of lint dipped in perchloride of iron left in. This plug came away of itself six days after it was put in, and, with the exception of a hæmorrhage from his anterior nares, which was stopped by plugging, there was no more trouble.[1]

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[1] Since the above went to press the case of primary amputation of the leg for railway injury succumbed to tetanus, and died on April 10. The amputation wound had healed kindly, and he was only kept in bed because of the toes of the other foot, which had been injured in the accident. They also were doing well; but on the 6th April the premonitory symptoms of tetanus appeared. He was at once put under the influence of chloral hydrate, which had the effect of diminishing the spasms, but not of stopping them completely. He died, seemingly of exhaustion, on the 10th, about 8.30 P.M. Temp. then was 106°·8; pulse could not be counted. Previous to death, both pleuritic and pericardial friction could be heard. During the 5 days he lived after the tetanus commenced he had in all 1220 grs. of chloral hydrate. The last dose was given two hours after the last spasm, and fifteen before death, and discontinued only because no more spasms occurred. Up to an hour or two before death his breath had a strong odour of chloral, showing that in large doses this drug is eliminated by the lungs as well as by the kidneys. His pupils were contracted, and only slightly sensitive to light.

Post-mortem.—External appearances.—Body fairly nourished. Rigor very well marked. Back arched forwards. Mouth slightly retracted. Appearance pinched. Fingers of left hand semiflexed; those of right extended. Amputation wound healed. Toes of right foot granulating.

Heart weighed 11 ounces. Half an ounce of serum in pericardial sac. Right side distended; left nearly empty.

Amputations.

	No.	Recovered.	Di
Lower Extremity—			
Thigh	5	4	1
Leg	4	4	0
Ankle (Syme)	4	4	0
Great Toe	1	1	0
	— 14	— 13	—
Upper Extremity—			
Upper Arm, ...	1	1	0
Fingers, ...	7	7	0
	— 8	— 8	—
Penis, ...	2	2	0
	— 2	— 2	—
	24	23	1

Amputations in relation to Injury and Disease.

Thigh—			
Injury, Primary (pit accident) . .	1	0	1
Disease of Knee-joint. . . .	4	4	0
	— 5	— 4	— 1
Leg—			
Injury, Primary (railway) . . .	1	1	0
„ Secondary—Traumatic Gangrene .	1	1	0
„ „ Gangrene after Frost-bite	1	1	0
„ „ Ulcerated Stump .	1	1	0
	— 4	— 4	— 0
Ankle (Syme)—			
Injury, Primary (machine injury) . .	1	1	0
Disease, Caries of Tarsus . . .	2	2	0
„ Congenital Talipes Varus . .	1	1	0
	— 4	— 4	— 0
Great Toe—			
Injury, Primary (compound dislocation) .	1	1	0
	— 1	— 1	— 0
Total of Lower Extremity	— 14	— 13	— 1
Upper Arm—			
Disease of Elbow-joint	1	1	0
	— 1	— 1	— 0
Carry forward,	1 14	1 13	0 1

Lungs.—Pleural cavities both almost dry. Left lung weighed 14 oz., very emphysematous and adherent. In many of the bronchi throughout the organ there was a quantity of gray semifluid material, probably consisting of vomited matter mixed with mucus. Right lung weighed 13½ oz. Thin coating of fibrinous lymph over the pleura of the lowest lobe, with some punctiform ecchymoses. Throughout the lowest lobes the bronchi, large and small, contained a large quantity of tenacious, almost fibrinous secretion. Many of them contained pus. The greater part of the lung tissue in connexion with them was infiltrated with effusion, probably both catarrhal and croupous. At one or two places near the periphery were wedge-shaped, purulent-looking portions of lung tissue. They looked like commencing pyæmic abscesses. The same condition was present, to a less extent, in the upper lobe.

Other organs healthy.

Spinal cord seemed normal (no congestion).

Amputations—continued.

	No.		Recovered.		Died.	
Brought forward,	1	14	1	13	0	1
Fingers—						
Injury, Primary (machine accidents) . .	3		3		0	
Injury Secondary, for Gangrene after Frost-bite	1		1		0	
„ „ „ Injury	1		1		0	
„ „ Sloughing of Tendons after Injury	1		1		0	
Disease, Necrosis, etc., after Whitlow . .	1		1		0	
	— 7		— 7		— 0	
Total of Upper Extremity		— 8		— 8		— 0
Penis	2		2		0	
		— 2		— 2		— 0
Totals of Amputations .		24		23		1

Excisions of Joints.

Shoulder	1	1	0
Elbow	1	1	0
	2	2	0

Tumours.

Carcinomata—						
Scirrhus of Mamma	11		10		1	
Epitheliomata of Lip	4		4		0	
„ of Tongue (2 recurrent) . .	3		3		0	
„ of Chest-wall	1		1		0	
„ of Penis (2 cases under "Amputations")...	...		...		...	
		— 19		— 18		— 1
Sarcomata of Eyeball	1		1		0	
„ of Tonsil	1		1		0	
„ of Mamma (1 in male) . . .	3		3		0	
„ of Upper Arm	1		1		0	
		— 6		— 6		— 0
Simple Tumours—						
Fibro-cartilaginous, of Parotid	1		1		0	
Fatty, of Neck	2		2		0	
Exostosis of 5th Metacarpal	1		1		0	
Cystic, of Head (Wens)	3		3		0	
„ Dermoid of Forehead	1		1		0	
„ of Chin	1		1		0	
„ Sebaceous, of Neck	1		1		0	
„ Sebaceous, of Back	1		1		0	
„ of Anus	1		1		0	
Nævus of Face	1		1		0	
Molluscum Fibrosum (1 case, 6 tumours removed)	1		1		0	
Total of Simple Tumours		— 14		— 14		— 0
Total of Tumours		39		38		1
To which add 2 under "Amputations"		41		40		1

Diseases of Bones.

Necrosis of Humerus	1	1	0
„ Radius	1	1	0
„ Femur	2	2	0
Cario-necrosis of 1st Metacarpal	2	2	0
	6	6	0

	No.	Recovered.	Died.
Diseases of Tendons.			
Talipes Equino-varus	2	2	0
Wry-neck	1	1	0
Dupuytren's Finger Contraction	1	1	0
	4	4	0
Eye Affections.			
Excision of the Eyeball for Result of Injury	1	1	0
" " for Sarcoma (under "Tumours")	...	...	...
	1	1	0
Operations on Face.			
For Lupus of Nose	3	3	0
" of Cheeks	1	1	0
" of Lower Lip	1	1	0
Repair of Nose	1	1	0
" Lower Lip (after Epithelioma)	1	1	0
	7	7	0
Air-Passages.			
Tracheotomy for Diphtheria	1	0	1
" for Cancerous Tumour of Trachea	1	1	0
	2	1	1
Nerves.			
Neurectomy for Neuralgia	1	1	0
	1	1	0
Hernia.			
Strangulated Inguinal Hernia	4	2	2
" Femoral "	1	1	0
	5	3	2
Genito-Urinary.			
Lithotomy	1	1	0
Vesico-Vaginal Fistula	1	1	0
Epithelioma of Penis (2 cases, "Amputations")	...	...	...
Phymosis	3	2	0
Hydrocele (Rad. op.)	2	2	0
Fungus Testis	1	1	0
	8	8	0
Rectum.			
Fistula in Ano	1	1	0
Hæmorrhoids, Venous	1	1	0
" Internal	1	1	0
	3	3	0
Totals.			
Amputations	24	23	1
Excisions of Joints	2	2	0
Tumours—41, minus 2 (included under "Amputations")	39	38	1
Carry forward,	65	63	2

Totals—continued.

	No.	Recovered.	Died.
Brought forward,	65	63	2
For Diseases of Bones—7, minus 1, exostosis (under "Tumours")	6	6	0
Tenotomy	4	4	0
Excisions of Eyeball—2, minus 1 (under "Tumours," a sarcoma)	1	1	0
Operations on Face	7	7	0
Tracheotomy	2	1	1
Neurectomy	1	1	0
Herniotomy	5	3	2
Operations on Genito-Urinary Tract—10, minus 2 cases (under "Amputations") . .	8	8	0
Operations on Rectum	3	3	0
	102	97	5

Part Second.

REVIEWS.

Practical Lithotomy and Lithotrity. By Sir HENRY THOMPSON, F.R.C.S. 3d Edition. 1880.

SIR HENRY THOMPSON has furnished the profession with a new edition of his valuable work on the operations for stone in the bladder. He is our greatest authority on the subject, and consequently whatever he says is most valuable, being backed by his unrivalled experience as well as skill and success.

His remarks on lithotomy commence with a brief (but most practical) review of the anatomy of the perineum. He discards the usual description which speaks of the perineum as being triangular or lozenge-shaped, and prefers to consider it as "heart-shaped," like the "ace of hearts with the apex upwards."

We consider this a valuable and practical description, though not strictly correct; for the part of the perineum in which the lithotomist has most space and freedom in making his incisions is the lower and outer portion—the "lobe of the heart," as Sir Henry Thompson would say. Another practical advantage which is taken of this description of the perineum is referred to in the following words:—"Hence, in withdrawing a large stone from the bladder, traction must be made obliquely downwards, to the right of the operator, in the direction of least resistance, which is towards the hollow of the sacrosciatic ligaments, where the fibres of the gluteus muscle only cross the heart-shaped space already indicated as the true outlet of the male pelvis" (page 13). This sentence follows an argument in which is clearly demonstrated that a large stone cannot be removed so easily through the comparatively narrow portion of the perineum which lies above the ischial tuberosities as through the lower or posterior portion—the "lobe o the heart." In regard to the performance of the operation o author's opinions will be looked on with interest. We shall selec a few points, and give his own words as far as possible.

On the question of how much water should be in the bladder h says, "It is sufficient to take the chance of the urine accumulatin for an hour before the operation; at all events, any attempt t inject an irritable bladder is rarely of any service" (p. 21).

We gather from several remarks that the gorget is more in favour with Sir Henry than among surgeons here. While he says (p. 33 "There is a certain ease and simplicity in the use of a single knife which has commended it greatly to modern surgeons, and, unless there are some exceptional circumstances present, it must be admitted to be both a safe and convenient instrument," still he adds further on, "When the perineum is deep . . . . I prefer the probe-pointed knife for the last incision, as well as the blunt gorget to dilate it and conduct the forceps into the bladder."

As to the employment of a tube after the operation, our author considers it unnecessary, and has not employed it for some years, except in cases of hæmorrhage (p. 39, etc.)

One of the most interesting portions of this valuable work we consider to be the remarks on the risks to be met with in the performance of lithotomy— risks, such as wounding the rectum, bulb, or pudic artery, and cutting beyond the capsule of the prostate, thereby causing infiltration of urine into the deep structures, risks which are doubtless ever present to the mind of the lithotomist, and certainly are thoroughly dinned into the ears of students; and it is most refreshing to read Sir Henry Thompson's frank and fearless statements on these points. He sums up the dangers into two principal ones. He says, "I wish, then, to point out that in shunning Scylla we may encounter Charybdis, ... that we must preserve the neck of the bladder equally from too deep an incision on the one hand, and from the mechanical injury necessitated by one which is too limited on the other" (p. 66). He points out that the great success obtained in operating on children demonstrates that there can be no great risk of infiltration following an incision right through the prostate; seeing, the prostate in children being very small, the knife is always carried completely through that gland and a considerable piece beyond. He is not afraid to state, also, that the rectum (especially in children) is frequently wounded, and that little harm comes of it. He considers that the real dangers and risks to life arise from rough handling in the attempt to extract a calculus through an insufficient incision, and from reckless cutting in the attempt to appear brilliant, as when operating against time. In speaking of the causes of death he refers to this again, and points out that care and gentleness are as essential to the proper performance of lithotomy as of lithotrity. His opinion of the main source of danger to life may be ummed up in the following sentence:—"Danger is always great n a ratio proportioned to the size of the calculus, but this arises uite as much from the violence inflicted in removing it as from he depth of the incisions employed" (p. 66). He says again p. 69), "All agree in the vital importance of extracting the stone vith great care and gentleness, and of giving time in abundance o this part of the proceeding." We cannot dwell longer on this ubject, however interesting, but must consider the second part of Sir Henry Thompson's work, which is on what may be considered his speciality—lithotrity.

Under this name he includes all crushing operations—or, to use his own definition, all those processes by which the stone is broken up in the bladder and removed through the natural canal of the urethra. One is naturally most interested to know what our author has to say to the comparatively new operation of "lithotrity at a sitting," as more recently advocated by Dr Bigelow. Chap. xi. is devoted to this; but there are besides many references to the subject in other parts. What we gather from the whole is this: Sir Henry Thompson is not averse to the procedure, and is increasingly inclined in its favour; whilst at the same time he objects to the large instruments recommended by Dr Bigelow, which he describes as "unnecessary and undesirable" (p. 190). In his history of "the procedure" (which, however, is very brief) we are astonished to find no one referred to as having proposed or practised the operation but Dr Bigelow. Among others, Dr P. H. Watson of this city performed "lithotrity at a sitting" in several cases, and published them in this Journal as early as 1859. Dr Watson at the same time described a method which greatly facilitated the operation, viz., by a lever or pair of spring forceps, which could be adapted to almost any lithotrite.

The conditions favourable to success in lithotrity are put thus briefly (p. 125): "1. A capacious and not very tender urethra. 2. A bladder capable of retaining 3 or 4 ounces of urine. 3. Absence of the ordinary signs of renal disease, and fair general health." To these we may add what is frequently dwelt upon by the author—a comparatively small stone.

On the question of the best instrument to employ, we find a decided preference shown for a small instrument which is yet strong enough to crush the stone easily, and somewhat fenestrated to prevent choking with detritus—this instrument only being used at a "sitting," even when the whole of the crushing is to be performed at once.

A much debated point often is the amount of fluid which should be in the bladder for the proper and safe performance of lithotrity. We find stated (p. 143), "Perhaps three or four ounces may, as a rule, be always present with advantage, especially for young operators. Nevertheless, I am bound to say that, with instruments constructed on the principles laid down, no mischief can be done by proper manipulation in a bladder which is empty or nearly so; and, for myself, I as frequently operate in that condition as not. . . . . For several years I have never made any preliminary injections, nor even desired the patient to retain his urine before the hour fixed for operating." The safety in such cases consists, we are told, in maintaining the blades of the lithotrite in the centre of the bladder, firmly fixed, and in moving only the male blade in the manipulations necessary for crushing the stone.

Considerable importance is attached to the employment of what is now called the "aspirator," which is simply the old washing-out bottle. The whole of the crushed fragments should be removed by the evacuating catheter and aspirator, and none by the lithotrite. Fragments that are too large to be washed out through a full-sized catheter would certainly injure the urethra were any attempt made to remove them by the latter means.

In describing the operation, of course, there are many most valuable remarks which we would gladly transfer to this notice; but in so doing we would have to quote many pages, and even whole chapters. These should be read where they are; and we cannot do better than recommend our readers to study the book carefully for themselves, well assured that they will be thoroughly rewarded by the amount of valuable information which they will find.

There is only one little point to which we would direct our author's attention for correction. At page 146 the method of introducing a lithotrite is described. The operator is directed to hold the instrument with "the blades pointing downwards." Then the further passing of the instrument is continued along the urethra and into the bladder without a word as to whether or when the points of the blades should be reversed. Either we have read the directions wrong, or there is some mistake here, for we cannot see how any instrument could be passed into the bladder with the point downwards.

We cannot close this notice without referring to Sir Henry Thompson's advice to operators in regard to the selection of lithotomy or lithotrity in any given case of calculus. The usual success of the former operation in young subjects, and their general unsuitableness for the latter, makes lithotomy most undoubtedly the operation for children. In adults lithotrity should be preferred, unless the stone is of considerable size or the patient otherwise unsuitable. It is evident that lithotrity is being more and more practised, and is displacing the older operation in the case of adults. Our author almost ventures to prophesy that lithotomy in adults will disappear altogether. He points out that the size of the calculi removed by operation is steadily diminishing, owing to their being discovered and removed at an earlier stage of their existence than formerly. And if it be the case that all medium-sized as well as small stones should be crushed, it is evidently only a atter of time till the knife is altogether laid aside, except for ildren.

Although the book which we have been reviewing is only a new lition of a well-known and standard work, still we have thought right to give this somewhat extended notice of it, as anything n the subject treated of which comes from the pen of such an uthor must be of more than ordinary interest and value to the rofession.

The Journal of Anatomy and Physiology, Normal and Pathological. Vol. XIV. Edited by Professors HUMPHREY, TURNER, and M'KENDRICK, and Dr CREIGHTON. London: Macmillan & Co.: 1880.

THIS volume of the *Journal of Anatomy and Physiology* is of very great interest to the medical man on account of the number of excellent papers on pathological subjects. To these we shall turn first.

Dr Creighton calls attention to the hard cancers of the breast, and to their infiltrating properties. He starts with Sir J. Paget's definition of infiltration as being the insertion of structures proper to cancer in the interstices of the proper tissue of the part, and then discusses two propositions—1. That the initial condition of the original epithelium is in many cases that of an actual or literal infiltration into the surrounding stroma; and 2. That it is this literal and actual insertion of epithelium that determines, through the mimicry of infection, the familiar appearance of alveolar or linear groups of epithelial cells springing from the stroma cells at a number of independent centres. In another admirable paper on the pathology of sarcoma he takes occasion to say, with regard to the origin of such tumours, that there is not a survival of the embryonic tissue itself, but of the *tendency to form* embryonic tissue.

In discussing the development of connective tissue in hepatic cirrhosis, Dr D. J. Hamilton points out that the liver cells are one of the main sources of the fibrous tissue. The cell nucleus enlarges, becomes nucleolated, and divides. This is followed by division of the cell. The cell division goes on; at each successive division the nucleus becomes as large as the former, but the periplast does not increase, and finally only free nuclei are left. Each nucleus becomes oval and begets a new fusiform periplast, which splits into fibres and forms connective tissue.

In tracing out the nexus between disease of the ear and consecutive brain lesions, Dr M'Bride has made a distinct step towards the elucidation of a vexed question. He describes a case of suppuration of the ear with accompanying cerebellar abscess. Microscopic examination of the temporal bone shows numerous bacteria passing through its spaces and canals. On theoretic grounds this condition has been pointed out as probable by von Troeltsch, and this absolute confirmation is of great importance. Dr M'Bride also describes a hitherto unknown croupous inflammation of the cochlea. Delicate fibres and leucocytes occupied the scala vestibuli, and granular matter was found in the scala tympani, but the cochlear duct was almost intact.

Dr Dreschfeld, in describing a liver tumour, says that cancer is not often derived from liver cells. In narrating a case of cerebellar psammonium he states that this is only a degeneration, and that the tumour should be called a *psammo-sarcoma*. He describes in a most interesting paper the changes in the spinal cord after amputation, and points out that the motor cells of the gray cornua are chiefly affected by degeneration.

Dr Gibson describes a small tumour on the tricuspid valve of a sheep, which was found to be caused by rupture of one of the vessels and extravasation into the valve tissue.

Dr Foulis, in treating of the healing of wounds under antiseptic dressings, holds that in aseptic conditions the process goes on by granulation, modified by absence of irritation.

Of the physiological papers some are of great interest. Dr Barlow shows that ozonized air lessens the number of respirations and heart-beats as well as the absorption of oxygen and elimination of carbonic acid. He thinks these results are due to changes in the pulmonary mucous membrane, for one per cent. ozone in air would cause death from bronchitis. When directly in contact with blood it decolorizes the red, and stops the movements of the white corpuscles.

Dr Gibson gives a careful series of measurements of the duration of the cardiac movements, in which he states that the auricular systole may vary from 8·8 to 13·7 per cent., the ventricular systole from 29·4 to 40·6 per cent., and the diastole from 49·1 to 61·1 per cent. of the whole cycle. The ventricular systole is the most stable, and the diastole the most variable factor.

On behalf of the Glasgow committee, Dr Newman reports that ether, ethidene, and chloroform cause stoppage, first in the lung capillaries, later in the arterioles, and last of all in the larger vessels. The capillaries contract and the corpuscles may disintegrate. Ether is the least and chloroform the most active.

Among the anatomical papers there are many of great importance. Professor Flower and Dr Garson contribute an important article upon the "Scapular Index as a Race Character in Man." This index is the numerical expression of a proportion between the length and breadth of the scapula. The "infra-spinous index," *i.e.*, the distance between the root of the spine and the inferior angle, is also taken into account. Broca was the leader in this direction. In fourteen races (200 Europeans, 14 Australians, and 21 Andamanese) the authors found the Europeans to have a scapular index of 65·2 and infra-spinous index of 89·4; the Australian indices, on the other hand, were 68·1 and 93·3, and the Andamanese 69·8 and 92·7.

Dr William Allen, in the latter part of his paper on the human atlas, holds that whereas the anterior roots of the lower cervical transverse processes are the homologues of the head and neck of a rib each, and the anterior tubercles are representative of the shafts of the ribs, this is not so in the atlas and axis. In these vertebræ the portion of bone closing the vertebral foramen in front merely represents the tubercle of the rib, and the head and neck of the rib are both contained in the lateral mass.

Dr Anderson signalizes the occurrence of an astragalo-scaphoid bone in man; Professor Turner describes a cleft sternum from the University museum; and Drs Gibson and Malet narrate a similar case still in life, with a physiological analysis of the cardiac movements, while an abstract is given of the autopsy of the famous Herr Groux.

The papers on comparative anatomy are of the greatest value, especially that of Professor Turner on the Comb-like Branchial Appendages and Teeth of the Basking Shark; that of Professor Bridge on Vertebrate Pori Abdominales; and that of Professor Morrison Watson on the Homology of the Sexual Organs. Those papers, as well as one on the Anthropology of the Malay Archipelago by Professor Turner, we would fain bring before our readers, but limited space bids us draw to a close, merely expressing our admiration of this last volume of the Journal.

Aids to Diagnosis. Part I., Semeiology. Specially designed for Students preparing for Examination. By J. MILNER FOTHERGILL, M.D., etc, etc. "The eye can only see what it carries with it the power to see." London: Baillière, Tindall, & Cox.

As a rule, manuals for students preparing for examination are hurtful to them and useless to every one else. This unpretending little work seems to us to be of very great value, not only to students, but to all practitioners whose instruction has been from books and lectures rather than from practice. It gives in a very simple, pleasant, amusing manner the kind of instruction that a very high-class wise old practitioner might in his happiest moments communicate to his son or partner over his wine, or at a bedside where they could talk freely.

In 75 small pages there are mines of information. Possibly some of the statements might be disputed, some of the modes of putting them might be improved; but the book is rich in the elemen which induce and provoke thought and observation in the pupil. It educates, and does not cram. We have the greatest pleasure in recommending every student to purchase it; he is sure to read it, perhaps at a sitting, as we did.

Questions on Magnetism and Electricity. F. W. LEVANDER, F.R.A.S. London: H. K. Lewis.

On the Treatment of Naevi by Electrolysis. WILLIAM NEWMAN, M.D. London: H. K. Lewis.

The Strong Galvanic Current in the Treatment af Sciatica. V. P. GIBNEY, A.M., M.D. Philadelphia: Collins.

Medical and Surgical Uses of Electricity. BEARD & ROCKWELL. Third Edition. New York: William Wood & Co.

THESE books have only this in common, that they treat of electricity; and the first of them may be dismissed at once by saying that it is simply one of the noxious products of the modern system of cram.

As is the case with many other constituents of the materia medica, the physiological actions of electricity are imperfectly understood, and its therapeutics largely tentative and empirical. The literature is, accordingly, of the most varied merit, the practice generally haphazard. The general attitude of the profession towards it consists in a vague half belief in its general curative powers, and a tendency to try it in chronic cases when everything else fails. It is easy to understand how this has arisen. The specialists have vaunted its powers indiscriminately, as the Spa doctors do their waters, and yet every one has had experience of striking therapeutic results. The multiplicity of instruments confuses the would-be purchaser, and all of them are so prone to become disordered that probably they are as often employed as not in a state of total inefficiency. To remedy these evils will take time, and requires the education of the profession by the current literature of the subject. This necessarily assumes two directions. From time to time text-books sum up the general results, while, concurrently, clinical observations and experimental researches determine details. To the former category belongs the work of Messrs Beard and Rockwell. It has now reached a third edition, and it may on that account alone be presumed that it fairly fulfils the end it has in view. It undoubtedly has merits which deserve recognition. Of these the chief is its exhaustive character. It traverses the whole field. Whatever department you examine, some kind of information will be found in the book. It presents, also, a large amount of clinical ecord, plainly indicating a wide experience in the use of the agent, nd giving a certain basis of fact on which the practitioner may ound his employment of it. It has many faults, some of which re inseparable from the subject, while others are due to the diosyncrasies of the authors. In this edition the earlier portion f the book has been somewhat curtailed by excision. This might e carried further with great advantage; and, indeed, the first two undred pages should be entirely rewritten. What is wanted in a text-book is not a succession of dotted facts on electro-physics, electro-physiology, and the history of electro-therapeutics, but a condensed summary of those things which are necessary to a correct appreciation of the medical applications, in which the known laws of the force are lucidly explained and their bearing on medicine pointed out. If history was to be discussed, at least it should be attempted in a useful manner, with the successive discoveries emphasized, and the bibliography carefully noted. It is evident that the authors are not electricians; and as it was not absolutely necessary that they should profoundly study the scientific aspects of electricity, neither was it essential that so large a portion of the work should be devoted thereto.

The clinical portion of the book is the more valuable, as giving details of a large amount of work, from which may be extracted much useful information. Here again the bibliography of the subject is most imperfectly worked up and the references exceedingly imperfect. The same tendency is also strongly marked to the record of isolated and useless observations, and a most disagreeable impression left that the whole thing is a gigantic advertisement. There is no attempt whatever in any part of the book to estimate the comparative value of electrical and other treatment in individual forms of disease. Take the two subjects which are treated in the pamphlets by Dr Gibney and Dr Newman, the anodyne and the electrolytic properties of electricity. They are precisely the properties from which our most valuable and certain effects are derived. In the relief of pain, both temporarily and permanently, we have most remarkable effects frequently produced. In a book such as Dr Rockwell's we should expect to find a clear exposition of the kind of cases in which good results may be obtained, to what remedies it should be postponed, with which concurrent. What we find are general and vague statements, and a few inconclusive and unconnected cases. Dr Gibney's results with a strong galvanic current in sciatica are recorded; galvano-puncture is mentioned with mild approval, the metallic brush, local galvanization, and even general Faradization, are damned with faint praise, and at the end of the chapter on neuralgia the student is left with a confused impression that anything will do for everything, although the author at the beginning had made a most definite announcement to the contrary.

The department of electro-surgery is treated in a very unsatisfactory manner. Every disease in which it may be or has been used is recorded, but any attempt at appreciation of the value treatment is avoided or is erroneous. The galvanic cautery possesses all the properties, and no more, which belong to heat. It is therefore a mere question of convenience what form of cautery should be used. Now, the galvanic cautery has this advantage over all others, that it may be maintained steadily at the necessary black heat without being quenched by the blood and tissues. But the instruments are inconvenient, unportable, and unstable, *and it is* quite plain that until we get a rotary machine which can be worked easily by the hand the galvanic cautery will not take the place of the hot iron, much less of Paquelin's cautery.

The usefulness of electrolysis in a limited class of nævi is very fairly brought out by Dr Newman. When a scar is important, and time is not, it finds its place. The applicability in cirsoid aneurism, its failure in aneurism by anastomosis, its power to relieve symptoms and delay death in aortic aneurism, to cure certain other aneurisms beyond the reach of surgical interference, its comparative uselessness in solid growths, and a multitude of other points, might easily be demonstrated from the experience of many surgeons. But Drs Beard and Rockwell are quite content to put on record that they in-inserted insulated needles into this, uninsulated into that, cut off one tumour with the galvanic cautery, and harrowed another, and if they draw conclusions at all, do so from insufficient data or without any justification whatever. In short, this book is a most annoying mass of crude, undigested, valuable facts with a connecting chain of ill-considered remarks.

Hernia, Strangulated and Reducible. By Jos. H. Warren, M.D., of Boston. London: Sampson, Low, Marston, Searle, & Rivington.

In this book Dr Warren has favoured the profession with an account of his method of treating hernia by injecting a stimulating fluid into the tissues which immediately surround the apertures, and so promoting closure by the effusion of plastic lymph.

The operation consists of several stages—first, the complete return of the hernia; next, the insertion of a fine hypodermic needle (which is blunt-pointed to prevent injury of important structures), from which a few drops of an irritating fluid is injected into the cellular tissue at the internal and external ring, and also along the canal (in oblique inguinal hernia). As a result of this operation, inflammation is set up (as in the case of an injected hydrocele), which lasts for some days, during which time the patient is kept in bed, and cold applied over the inflamed and swollen part To give the irritated textures opportunity to become agglutinated, the patient must be kept in bed for a fortnight or three weeks.

Our author's specialities are, a spiral needle, which rotates as it is serted, and thus, it is supposed, passes easier and distributes the jected fluid more generally, and the irritant used, which is a ixture of quercus alb., alcohol, ether, and morphia.

For this operation Dr Warren claims that it is generally successul and implies little or no risk. We find, however, on reading is book carefully and examining his cases, that the operation ometimes needs to be repeated, and even then that the result may e unsatisfactory from some slight indiscretion or obstinacy on the part of the patient. Also there is undoubted risk of suppuration (and that to a considerable extent) being caused by the irritant fluid. Dr Warren admits that the operation requires great care and experience on the part of the operator, may fail, or cause even serious mischief, in the hands of the careless or ignorant, and requires weeks of careful watching and hospital treatment to secure anything like a successful result.

On the whole, we are inclined to recommend this operation to practical surgeons for a fair trial. We found our recommendation mainly on an anatomical fact which Dr Warren points out, and which, though it is not new to any one, is apt to be forgotten by surgeons, from the manner in which they are accustomed to speak of the hernial openings as "rings." The fact is this, that these so-called rings are not rings at all, but have their walls in contact (generally), except when they are separated by the hernial protrusion. It seems natural enough, when we remember this fact, that if we can irritate these tissues in such a manner as to make their opposing surfaces become covered with plastic lymph, their subsequent fusion together is merely a question of rest and time.

Dr Warren prefixes to his work a statement of the introduction of the operation by injection by Dr Heaton of America. The latter practised this operation as a secret, and published a defence of himself in this most unprofessional proceeding. The said defence amounts simply to this, that Dr Heaton considers any discovery which he may make is not to be used for the benefit of the public or the profession, but of himself and his family.

We are glad to think that such sentiments are not generally held in the profession, nor would any one defend them on this side of the Atlantic.

Transactions of the Calcutta Medical Society for the Year 1880. Reprinted from the *Indian Medical Gazette.* Vol. I. Calcutta.: 1880.

We have much pleasure in welcoming this little volume, which, though unpretending in its size, contains a vast amount of interesting matter. Indeed, for brevity, compactness, and freedom from unnecessary detail, this record of practice may serve as a model for older and richer societies. Some of the papers are very interesting: One by Professor M'Leod, on Fracture of Upper Third of Ulna in connexion with Dislocation Forwards of the Head of the Radius, is both original and thoughtful. Another by Dr E. W. Chamber on the new disease Acute Œdema, is very interesting. Assistant-Surgeon Anoda Cham Kastager on the Surgical Treatment of Scrotal Tumours, Wounds, and Ulcers, shows how much good work can be done with very insufficient and humble appliances, if aided by common sense and good surgical principles. We must criticise two great defects—first, the page headlines are merely repetitions of "Calcutta Medical Society," and there is neither an index nor a table of contents!

Note-Book of Materia Medica, Pharmacology, and Therapeutics. By R. E. SCORESBY-JACKSON, M.D., F.R.S.E. Fourth Edition, revised and brought down to the present date by Dr FRANCIS W. MOINET, F.R.S.E. Edinburgh: Maclachlan & Stewart: 1880.

THIS once popular work on materia medica has reached a *fourth* edition. The first edition was published in 1866, the second in 1870, the third in 1874, and the *last* in 1880.

We have on various occasions given our estimate of this book, and our chief duty at this time is to look at this edition as differing from the previous ones.

Dr Moinet has wisely followed the example of other writers by giving only the new chemical notation, and this is the chief point in which this edition excels its predecessors. As a text-book for students, it must be admitted that the volume contains much that no student is ever expected to learn, and we are forced to express our disapproval of the too common practice in works on materia medica of reprinting the British Pharmacopœia, especially in regard to the preparation of the various officinal substances. We firmly maintain that all who manufacture medicines should do so directly from the British Pharmacopœia, and not from a work on materia medica, however excellent that work might be.

This edition is by no means distinguished for the accuracy of its chemical formulæ; for example, iodide of sulphur appears as S_2I, nitric acid as $2HNO_3 3H_2O$, as if the *acidum nitricum* of the B. P. were a definite chemical compound.

The editor tells us that he has "altered the original text in many places, in consequence of the progress which the science of therapeutics has made since the date of the previous edition." We fear that in many cases this desirable end has not been attained. For example, neither under benzoic acid nor benzoate of ammonia is any mention made of the cholagogue action of the benzoates, and of their great use as hepatic stimulants.

In the preface we are told that the editor has "retained the botanical descriptions of such plants only as are indigenous." We doubt the wisdom of leaving the student entirely ignorant of the botany of the great majority of the officinal plants. This could easily have been done without giving their full botanical details.

There is abundant evidence in this work that the editor is by no means distinguished for his botanical knowledge. Frequently he has neglected to append to the specific name of a plant the author, which in many cases leads to confusion.

He falls into a common mistake in supposing that the *Ulmus campestris*, Sm., is identical with the *Ulmus campestris*, Linn., and is thus led to describe the English elm as the one officinal in the B. P. More serious is his statement regarding the leaves of *Vaccinium Vitis idæa*, L., whose leaves are sometimes confounded with those of *Uva ursi*. Dr Moinet tells us that the leaves of this *Vaccinium* "are known by their serrated margin." No person could have written these words who had ever seen the leaves of this plant—a plant, we may mention, which is abundant on one of the Pentland Hills.

We wonder on whose authority it is stated that *Ruta graveolens*, L., is *not* officinal. Certainly in the B. P. it is given as the only source of *oleum rutæ*.

As examples of *indigenous* plants, if we are to regard them as such from their botanical descriptions being retained, we would mention the following, which may serve to show how much the editor knows of the botany of the British Isles. The botanical description of *Papaver somniferum* is retained, but not that of *P. Rhœas*. He has retained the botanical descriptions of *Glycyrrhiza glabra*, *Prunus Laurocerasus*, *Ecbalium officinarum*, *Anethum graveolens*, *Lavandula vera*, *Rosmarinus officinalis*, *Ricinus communis*, *Morus nigra*, *Quercus infectoria*, *Juniperus Sabina*, etc.

He retains the botanical description of the common larch, which certainly is not indigenous, but omits the botany of *Pinus sylvestris*, the *Scotch fir*, which every botanist knows is not only indigenous, but is very abundant on the mountains of the north of Scotland. Curiously enough (although we fail to discover why) he retains the botanical description ~~of~~ *Triticum vulgare*, the common wheat, but omits that of *Hordeum distichon*, common barley.

We could point out other inaccuracies in the book, but we have said sufficient to put the student on his guard, especially when the editor is dealing with botanical subjects.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LX.—MEETING VI.

Wednesday, 2d March 1881.—Dr P. H. WATSON, *President, in the Chair.*

I. *Dr Argyll Robertson* showed an EYE he had removed a few days ago from a man, on account of a small particle of steel resting upon and attached to the retina. This could be seen on carefully examining the preparation, as also a small aperture in the iris through which the body must have passed. There were several points of interest in connexion with the case. Patient was a boiler-maker æt. 28. Two years ago, in Bolivia, he received a small portion of steel into his left eye. A very slight amount of dimness of vision followed the injury; otherwise there was no uneasiness. The consequence was that for a period of several weeks he continued at work without applying for advice, but thereafter applied to a surgeon there, who on careful ophthalmoscopic examination saw the body floating in the vitreous, and tried to induce the patient to allow him to introduce a magnetized probe to withdraw it; but he refused and went back to his work, at which he continued for some time, but, fearing injury to the other eye, returned home for advice, and was seen by Dr Robertson. He found a small aperture in the iris, and a minute dark body suspended in the vitreous, with a metallic lustre, and swinging about with the movements of the eye. The lens was not affected, as the body had passed through the suspensory ligament between the lens and the ciliary processes. The eye was not tender, and the body did not occasion him much inconvenience, so he was advised to leave it alone in the meantime, being warned to come back if he felt any pain in it or the other eye, or interference with his power of vision. This was six months ago. He returned in March, saying he had experienced deep-seated pain in the eye, and the vision had become worse. On examination the body was seen to be no longer suspended in the vitreous, but had sunk to the lower and back part of the eye, and was resting on the retina, which was congested round it. There were several opacities in the vitreous, also. He could only read the largest of the test-types with that eye, and in it his field of vision was greatly contracted (A representation of the appearance of the retina, done by Dr Wyllie, shown). Under the circumstances Dr Robertson considered it advisable to try measures for the removal of the foreign body rather than enucleate, and therefore consulted his friend Professor ait as to the best electro-magnet for its removal. A very owerful instrument was placed at Dr Robertson's disposal, and he pplied one pole in close contact with the eye, in hopes that it would draw the body away, but found this had no effect. He next nade an incision between the internal and inferior recti muscles, through sclerotic and choroid, and introduced a magnetized probe in the direction in which the body was situated, but, on withdrawing it, found the body was not attached to it, and on ophthalmoscopic examination found that it had not moved at all. Under these circumstances he thought it advisable to wait, and Professor Tait undertook to get a probe-like pole attached to the electro-magnet. This was passed through the incision in the sclerotic, and the full strength of the magnet applied, but the foreign body did not alter its position. No irritation followed these operative procedures; but as the eye was a source of annoyance to the patient, Dr Robertson thought it best to proceed to enucleation at once, and, on examination of the eye afterwards, found a good reason for the failure of the attempts to remove the body. This was so attached to the retina by adhesions, that on attempting to lift it up from the retina, the retina moved along with it. The electro-magnet had been used on several occasions, and with success, to remove foreign bodies of a metallic nature from the eye. Dr Robertson thought it well to record this case, in order to show not only that sometimes there was failure, but also what the reasons for this failure were. Had he tried to remove the body by means of the magnet while it was free in the vitreous, he might have succeeded, and he thought such attempts should always be made before adhesions occurred.

II. *Dr Hamilton* then read his paper on the PHYSICS OF INFLAMMATION, with experiments.

The President was sure the Society would bear him out in saying how highly they had valued the paper, and with what extreme interest they had listened.

Mr Chiene would simply rise to move a vote of thanks to Dr Hamilton for the paper he had read and the excellent demonstration he had given them. He did not desire to criticise the paper; but he thought such a demonstration as they had witnessed that night showed the necessity of increasing the importance of natural philosophy in the preliminary examination for students of medicine.

Dr Hart wished to ask Dr Hamilton one question. In one of his diagrams he had shown a section through the long diameter of a vessel, with the red corpuscles in the centre and the colourless at the side, and stated that this position was due, among other causes, to the less specific gravity of the colourless corpuscles. Now, if this were the case, then in a cross section of a vessel the white corpuscles should be at the top, and the red beneath them. He would like to ask Dr Hamilton if this were so, and if not, how explained its not occurring.

Dr Angus Macdonald thought it a pity that a paper of such high merits should not receive the hearty thanks and commendation of the Society, and he therefore rose to express his cordial agreement in the vote of thanks proposed by Mr Chiene, and not to make critical remarks, which he did not feel himself competent to do. He thought this paper and demonstration a step in the right direction of explaining physiological and pathological phenomena as they occurred in the human economy, by the aid of those exact laws which came under the domain of natural philosophy. It struck him, however, as it had Dr Hart, that a tube placed horizontally, as Dr Hamilton had shown, was not free from fallacy, inasmuch as the structures representing the white corpuscles, when of less density than the fluid, would of necessity float in contact with the upper side of the glass tube, and when of greater density, in contact with the lower surface of it. If such a tube were arranged perpendicularly instead of horizontally, would the colourless corpuscles arrange themselves at the periphery, as they undoubtedly did in the horizontal condition? Until it was shown that in all possible situations of the tube the colourless corpuscles attached themselves to the walls, and the coloured occupied the middle of the stream, he did not feel perfectly convinced that Dr Hamilton had proved his thesis. But, at the same time, none could deny the beauty of the experiments and the excellence of the paper, and he felt very much indebted indeed to Dr Hamilton for the opportunity to see the one and hear the other.

Dr Blair Cunynghame said that in the tissues of the body the vessels must be supported in a much more elaborate manner than the tube before them, it being simply in the air, so that, in addition to the internal blood-pressure to which Dr Hamilton attached so much importance, some change must be presumed to take place in the tissue immediately outside the vessel to enable the corpuscles to accumulate there as they do after passing through the wall—some vital change. He did not know whether Dr Hamilton had made his experiments with the punctures on the upper side of the mackintosh cloth as well as the lower; but if he did so, he should like to know if the disks passed through the upper as through the lower. He must also say he felt the same difficulty as Drs Hart and Macdonald with regard to the position of the corpuscles in the tube.

Dr Wyllie had the misfortune not to be present at the commencement of this interesting communication, and was therefore afraid of offering any critical remark; but, so far as he could gather, the views of Dr Hamilton were that, given a flow of blood sufficiently slow, the white corpuscles would separate from the others and roll slowly along the periphery; secondly, that, given any increase of pressure within the vessels, the corpuscles would then tend to pass through

he walls. He did not know what influence Dr Hamilton attached o the nervous and other tissues about the inflamed part in causing he phenomena of inflammation. He would suggest, with all respect o Dr Hamilton, that something was missed out if these were not eferred to, and he would cite Mr Lister's papers on inflammation, in which it was shown that inflammation was due to irritation of tissue, and was essentially dependent upon changes in the nervous and other elements. No doubt, a good many of the phenomena of inflammation could be explained by pure mechanics, but he did not think all could. If they could, then the phenomena seen on constriction of a limb, for example, should be those of inflammation, and not those of œdema, as we see. He made these remarks with some fear, because he might have missed some of the propositions made by Dr Hamilton in the early part of the paper, but he gathered from the remarks of other speakers that little had been said regarding the nervous and other influences. He agreed with those who had spoken before him in very highly appreciating this successful attempt to show what were some of the physical processes of inflammation.

Dr Grainger Stewart said those who were present from the beginning would know that Dr Hamilton had undertaken an explanation of only one particular aspect of the wide subject of inflammation, viz., the physics of the vascular changes. The whole paper, demonstration, and argument seemed to him to evince the very remarkable power Dr Hamilton had of setting forth his views in a clear and lucid manner, and also the foresight, care, and precision with which his experiments were arranged and carried out. But he could not feel satisfied with all the explanations that had been given by Dr Hamilton. Regarding the position of the white corpuscles and their passage through the walls of the vessels, the same difficulty had struck him as Dr Hart and Dr Macdonald had expressed. He hoped Dr Hamilton had some answer to it, but at present he could see none himself. He could scarcely follow Dr Hamilton in setting aside the influence of the vital action of the tissues in inflammation, simply on the ground that he could not understand it. He thought the tissues had more influence in causing the phenomena of inflammation than Dr Hamilton gave them credit for. He doubted, also, whether the position in which the migration of the corpuscles occurred corresponded to what Dr Hamilton's experiment would lead one to expect. But with regard to the other questions, he should have liked to have seen the paper in print before discussing it fully; but he wished to say, in common with the other members who had spoken, that he considered it a contribution of great interest, and such as the Society ought always to welcome.

Dr Buist thought the conditions of the experiments as shown by Dr Hamilton did not quite correspond with the conditions of the capillary and venous circulation in the body. The apparatus was got up merely for the purpose of showing an experiment, and n the actual conditions as they existed in the body. What thought Dr Hamilton wished to show was, that in inflamma the corpuscles of different specific gravity separated, and the lig adhered to the wall. On these grounds he did not see much fo in the objection raised by Drs Hart, Macdonald, and others, that t white corpuscles should occupy the upper portion of a vessel tube held perpendicularly. Though a good deal might be said behalf of the vital action of the tissues, Dr Hamilton had sho that the blood pressure had to do with transudation in a ve marked degree.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XL.—MEETING V.

Wednesday, 9th February 1881.—Dr BRUCE, *Vice-President, in the Chair*.

I. *Dr Halliday Croom* showed a FŒTUS on which he had performed cephalotripsy. Forceps had been ineffectually applied before he saw the case. The conjugate at the brim was under 3 inches, and as the transverse was also lessened, he deemed it best to perforate.

II. *Dr James Young* showed a CAST of the right arm, illustrating what has been called intrauterine amputation. The case was that of a young man, æt. 26. The carpal bones were perfect, and on the stump of the wrist were five rudimentary fingers, the thumb being about the size of a large pea. He could button and unbutton some of his clothes. The cast he now exhibited had been taken by Mr Brodie.

III. *Dr James Young* also narrated a case where the umbilical cord measured only 10¼ inches when completely uncoiled and put on the stretch.

IV. *Dr R. Milne Murray* then read his paper ON A FORM OF POST-PARTUM INCONTINENCE OF URINE, AND ITS TREATMENT BY FARADAISM, which appeared at page 907 of this Journal.

Dr Bruce thought the Society indebted to Dr Murray for his interesting paper, as it was a method of treatment in such cases that had not yet been brought before them, and appeared well worthy of a trial. Cases of this kind, however, were rare, as labour was not now allowed by medical men to go on too long. Much more often they had cases of retention of urine. At present he had such a case in his practice, occurring after a premature confinement. Possibly galvanism might be successful here also; but, such retention being usually of a very temporary nature, the catheter would have the preference.

Dr James Young asked Dr Murray as to his experience of the use of galvanism in cases of retention of urine.

Dr Halliday Croom congratulated Dr Murray not only on an accurate and careful record of a most interesting case, but also on the cure he had effected. He thought there was not much room for criticism, as Dr Murray had so definitely described the condition of the patient, as well as the rationale and technique of the treatment. Dr Croom had seen the patient last summer at his own home, and thought from the history that it was a case of vesico-vaginal fistula. He sent her to his clinique at the Maternity Hospital, with a view of demonstrating the case to his class. He was unable to find a fistula, and concluded the incontinence was due to some sphincter paralysis. He tried all sorts of remedies in vain, *e.g.*, ergot, strychnia, phosphide of zinc, and so on, but without any benefit. Dr Murray had suggested the galvanic treatment, and to him entirely belonged the credit of the cure. With his usual modesty, Dr Murray had claimed less credit than was his due. The case was in every sense a most gratifying one.

Dr T. D. Wilson said that Dr Murray had not differentiated sufficiently the terms Faradaic and continuous current. There was a dispute as to which was better in such cases.

Dr Murray thanked the Society for their reception of his paper. He had treated one case of retention of urine successfully in the same way. Dr T. D. Wilson was right in pointing out that he had used the term Faradaic and continuous current too indiscriminately.

V. *Dr T. R. Ronaldson* then read the following NOTE ON A CASE OF EARLY VIABILITY: — Having had an opportunity of accurately ascertaining the time of fruitful sexual intercourse resulting in the birth of a child, which has proved viable, between the sixth and seventh calendar months of utero-gestation, I think the case of sufficient importance to bring it before the notice of this Society, and to place it on record. Mrs C., æt. 21½ years, menstruated for the last time before becoming pregnant in the beginning of June 1880; she thinks the 3d or 4th. On the evening of the 25th of the same month, when she was expecting the return of her menstrual period—for she menstruated every three weeks—she had for the first time sexual intercourse with him who is now her husband. Coitus took place also on the two following evenings. Morning sickness began about the 11th of next month, *i.e.*, about 16 days after the first coitus. She cannot tell the time of quickening. Finding herself pregnant, she and her husband, calculating from the 25th of June 1880 that her confinement would take place in the end of March 1881, arranged that their marriage should take place on the 13th of January 1881. Their scheme was, however, upset by the onset of labour on the evening of 2d January. The labour was natural, the second stage being an easy and comparatively short one, and was finished at 5 P.M. on 3d January. The child was healthy, plump, and vigorous, and cried lustily, but small, weighing 3¾ lbs., and meas ing about 17 inches in length. The nails were short and ra soft. The eyelids could be opened. The left testicle had descen into the scrotum, the right had not. Taking it for granted th the child would not live, I did not make any more exact examin tion of it. At the same time, it appeared so vigorous and so wel developed that I had a faint hope that it might prove viable. I is now more than five weeks old, weighs 4 lbs. 9 oz., and measur 18 inches in length. The right testicle, which had not left t abdomen at the time of birth, is in the spermatic cord. It has l its plump appearance, but it is lively and has every appearance o surviving further. It was unable to suck the nipple for above a fortnight after birth, and was fed on cow's milk diluted wi water. It is now, however, able to take the breast.

Remarks.—It is certain that Mrs C., then a domestic serva and unmarried, menstruated in her usual way in the beginnin June 1880. Apart from her own statement, a fellow-servant testifies that she did, as also does her aunt, who washed her clothes. Fro that time up to the 25th of the month there was absolutely n opportunity for sexual intercourse between her and her husban, while on the evenings of the 25th, 26th, and 27th of the mont there were every facility and convenience. Nor was there a opportunity for intercourse with another. Immediately after he menstruation she left her situation and lived with her aunt, out o whose company she never was until the 25th. The transit from her situation to her aunt's house took place in the middle o the day, and from one part of the town to the other. Her statement as to the onset of morning sickness is corroborated by a fellow-servant. Both parents have been separately and repeatedly subjected to a tolerably severe cross-questioning by myself and by the woman's aunt—a most intelligent and observant woman—and their replies have been so consistent, frank, and straightforward that I have no doubt that their statements are reliable. Moreover, from the corroborative testimony of relatives and friends, from the circumstances in which the parents were placed at the time, and from the fact that they themselves, in arranging the time of their marriage, calculated from the 25th of June, I believe that the time which has been stated as that of fruitful coitus is correct, and that the child, on the day it was born, was, at the most, 192 days old from its conception, *i.e.*, 6 calendar months and 9 days. There is no doubt that when born it appeared more fully developed than is stated in text-books to be usual between the 6th and 7th months of utero-gestation, and, in view of the apparent discrepancy between the period of utero-gestation and the development of the child, I would like to ask the opinion of members as to whether the 21 day type of menstruation in the mother may not account for the discrepancy. Coitus occurred immediately before, and the birth took place immediately after, what should have been a menstrual period, so that the mother missed ten menstrual periods. Is it not possible that, in women whose menstruation is of the 21 day type, the fœtus may develop more rapidly than in women who menstruate every 28 or 30 days?

Dr Bruce said it was evident Dr Ronaldson had taken great pains to ascertain the patient's exact history. He could refer to one case in his own practice of viability at six months. The child survived for forty hours, and died evidently from loss of heat. Dr Sinclair had recorded a case where a child 2½ lbs. in weight and 13 in. long was viable at six months and lived for about half a year, when it weighed 6½ lbs. and was 17 in. in length.

Dr Rattray had a case where a lady, who came to Portobello for change of air, was delivered of a child (6½ months), which ultimately throve. He had also seen another case of a delicate asthmatic lady who was delivered of a child at the 7th month of pregnancy. It only survived five days, however.

Dr Wilson felt interested in Dr Ronaldson's record. He remembered a case where the child was born at the sixth month, weighed 2 lbs. 15 oz., and lived 3½ months.

VI. *Dr Ronaldson* then read the following NOTE ON A CASE OF CONGENITAL CLOSURE OF THE POSTERIOR NARES:—The case which I have now to bring before your notice seems to belong to a rare kind of congenital defect; but the defect is so important when it does happen that I think it well to call the attention of members of the Society to it. Mrs M. was delivered of her second child (a female), at the full time, on the night of the 2d inst. (2d February 1881). The labour was short and easy, the only peculiarity being that the liquor amnii was in excessive quantity. When the child was born I at once noticed that there was some peculiar obstruction to its breathing. On attempting to inspire, the lungs were not inflated, while the under lip and cheeks were sucked in. On slapping the buttocks to make the child cry, there was no difficulty to free respiration when the mouth was opened. On keeping the mouth open by a spoon and pulling the tongue a little forward, it breathed well and steadily, and cried lustily. There was therefore no obstruction to the respiration through the mouth and larynx. I accordingly proceeded to examine the nostrils, when I found that they were filled with a substance translucent in appearance and glue-like in consistence, and which, on being taken hold of, could be pulled out *en masse*, like a piece of tough glue. It was evidently a collection of inspissated mucus. After clearing the nose of this mucus, I attempted to blow air through the nares, but failed. Passing the forefinger of one hand to the back of the pharynx, with the pulp directed upwards, I next tried carefully and repeatedly to pass a probe, bent at the end, along the floor of either nostril and through the posterior nares so as to touch the finger in the pharynx. I failed to do this, and came to the conclusion that there was some organic obstruction of the posterior nares. As, on watching the child, I observed that whenever it reached a point of moderate asphyxia it opened its mouth to cry, and thereby had an opportunity of inflating its lungs through the open mouth, I thought I might with safety take the case to avizandum before attempting to do anything for its relief. On returning next day I found, to my great disappointment, that the child had died an hour after my departure. I fortunately had an opportunity of making a post-mortem examination, which, though imperfect, was sufficient to show that the posterior nares were completely occluded by a firm membrane. The firmness of this occluding membrane was such that an ordinary surgical probe could hardly be forced through it without bending on itself; indeed, it did so bend on itself before perforation was accomplished. After the probe perforated the membrane it passed freely into the pharynx. I did not discover any other abnormality. The nose, anterior nares, cavities of the nostrils, the hard and soft palate, were normal. The child was plump and well developed generally.

Remarks.—I have been unable to discover in medical literature the record of any case similar to that which I have brought under your notice this evening. It shows that the nostrils are the proper channel through which respiration takes place, that breathing through the mouth is an unnatural accomplishment learned afterwards, and that the newly-born child perishes if by any chance the nostrils are obstructed before it has learned to breathe through the mouth. The mucus secreted in the nasal cavity during intra-uterine life probably finds its way through the posterior nares into the alimentary canal, as in this case it had collected in the nostrils and had become inspissated. Were I to meet with a similar case, I would attempt to force an opening sufficiently large to permit of comfortable breathing through the posterior nares, and I would pass bougies as required. Were that to fail, a gag retained between the jaws until the child learned to breathe through the mouth might be tried, but difficulty in the feeding of the infant would probably be experienced. The only other resource would be tracheotomy.

Dr Bruce remarked on the great rarity of the case. The practical point to note was, death apparently ensuing from complete interruption to the entrance of air by the nose, while, had the child only kept its mouth open, there was nothing to prevent it from obtaining an abundant supply. The case is important, as teaching us what we ought to do in similar circumstances.

Part Fourth.

PERISCOPE.

MONTHLY RETROSPECT OF OBSTETRICS AND GYNÆCOLOGY.

By Angus Macdonald, M.D.

The Source of the Liquor Amnii, by Dr M. Wiener, Breslau (*Archiv für Gynäkologie*, Bd. xvii. Hft. 1).—The author repeated and corroborated the experiments of Zuntz, who found that, in the case of rabbits, colouring matter injected into the mother's blood found its way into the liquor amnii through the fœtal membranes, and that it did not enter the fœtal circulation. The colouring matter, however, was found in the contents of the stomach and bowels of the fœtus. The time between the injection and the examination varied from 2 minutes to 2½ hours. He also found that in the early months of pregnancy colouring matter passed from the mother's blood through the membranes only to a very slight extent. He then injected colouring matter into the mouth of the fœtus through the exposed membranes, and caused it to be swallowed by inciting reflex action with a cold sponge; and though he could thus bring it into the stomach, he found—as was also the case in grown-up animals—that it did not reach the kidneys, so he injected it under the skin of the back, first puncturing the membranes with the syringe. In this way he found that the colouring matter was secreted from the kidneys, and in one case twenty-five minutes, in another a few hours after injection, he found in the bladder a drop of strongly-coloured urine. This shows, he says, that the fœtal kidney secretion is not such a slow process as Fehling and Ahlfeld would have it. These results he obtained in a fœtus only 4½ centimetres long. He then argues that the fœtus must void its bladder, as when examined it is as often found to contain urine as to be empty. He then notices Scherer's opinion that the liquor amnii is derived from the skin of the fœtus, which is highly vascular, and says that the fact of its being found in the case of oviparous animals speaks for its fœtal origin. He also instances the fact that from the anatomical arrangement of the parts in many of the lower animals it is impossible that the fluid can find its way into the interior of the amnion from the maternal parts. The author then discusses and controverts seriatim Ahlfeld's arguments against the possibility of the liquor amnii being the product of fœtal kidney secretion. He gives a case where a pregnant woman died through accident, and where the fœtal bladder was found distended. From the fact of the structure and functional capabilities of the kidneys in the fœtus being the same as those in the adult, as proved by his experiments with injections of coloured fluids, and from the analogy of the liver, which secretes bile during intrauterine life, he argues that urine is there secreted also. The fact that meconium is not passed into the amniotic cavity he explains by the small quantity present relative to the size of the intestines which contain it. He also cites cases of abnormalities in development of the urinary passages, notably hydronephrosis, as proving that the kidneys are active organs during intrauterine life. In answer to Ahlfeld's objection that in cases where the kidneys were entirely absent the liquor amnii was still present, the author says that it is possible that other fœtal structures may perform the functions of the missing organ, just as in the adult the sweat glands occasionally act for the kidneys to some extent when these latter are diseased. Then, again, cases have been noted where, when the kidneys were absent, the amniotic fluid *was* deficient. He concludes by saying that there is no reason to doubt the fact that the kidneys secrete urine during intrauterine life, and that this is voided at intervals from the bladder; that while probably in the first months the surface of the fœtus and also the mother's blood contribute to the formation of the liquor amnii, the main source of it is to be looked for, beyond question, in the kidneys of the fœtus.

ON THE PROPHYLACTIC TREATMENT OF OPHTHALMIA NEONATORUM, by Professor Credé, Leipzig (*Archiv für Gynäkologie*, Bd. xvii. Hft. 1); also by R. Olshausen (*Centralblatt für Gynäkologie*, 1881, No. 2), and by D. Haussmann, Berlin (*ibid.*, No. 4).—The authors agree in the necessity of prophylaxis against this disease, in all lying-in institutions, at any rate, but differ somewhat as to details. Credé commenced by treating the eyes of children born of mothers who had a vaginal catarrh, first with 1–60 boracic acid solution, which failed, and then with two per cent. nitrate of silver solution, following this by washing the eyes frequently for twenty-four hours with two per cent. solution of salicylic acid. Encouraged by his success, but finding that the children of apparently healthy mothers occasionally took the disease, he treated all cases, and instead of washing the eyes with salicylic acid, he secured them for twenty-four hours with a bandage wetted with the solution. By these means he reduced his percentage of the occurrence from 13·6 to 0·5. The single case that went to make up this latter percentage was one where the treatment had been omitted. Olshausen, working at the same subject and at the same time, used a one per cent. solution of carbolic acid, which he pencilled ever the eyes after birth, and thereby reduced his cases from 12·5 per cent. to 6 per cent.; but latterly he has commenced treatment before the complete birth of the child, first pencilling the eyelids before they had been opened, and then washing the surface of the eye with a fresh piece of wadding, 1 per cent. carbolic solution being used for both purposes. In this way he has brought his cases down to 3·6 per cent. He also observes that the cases that have occurred have been much milder than were those before prophylaxis was practised, never going the length of ulceration of the cornea, and frequently only one eye being affected. He suggests that a two per cent. solution might be more efficacious. To guard against the infection of a sound from an affected eye, he recommends that the child should always be laid on the affected side, and that its hands should be tied. The use of a bandage he disapproves of. Haussmann, while agreeing with the others, recommends the use of antiseptic vaginal injections, especially in malpresentations and operative cases, as there is then a greater chance of the eyes being partially opened during birth.

THE EXACT MEASUREMENT OF ALL THE DIMENSIONS OF THE TRUE PELVIS ON THE LIVING SUBJECT, by Otto Küstner, Jena (*Archiv für Gynäkologie*, Bd. xviii. Hft. 1).—The author figures and describes a new instrument for the above purpose, by means of which the measurements may either be made out by calculation (from trigonometrical ratios), or a rough but accurate model of the interior of the pelvis may be made out of pieces of flexible wire. The instrument consists of a framework which is to be fixed over the anterior superior spines and the symphysis pubis, and a movable "touching rod," at the joints of which there are graduated scales, so that the instrument can be brought back to the exact positions it occupied when in use, and thus the relation of the points examined to the body or framework, and consequently to one another, accurately determined. The framework is fitted with numerous holes for the reception of pieces of non-resilient metallic wires. After the observations have been made and noted down, the instrument is removed, and, in accordance with the previous observations, these wires are to be so arranged upon it and bent as to make their ends represent the positions of the various points in the pelvis reached by the touching rod.

A CASE OF HÆMOGLOBINURIA OCCURRING DURING PARTURITION, by Dr Werth, Kiel (*Archiv für Gynäkologie*, Bd. xviii. Hft. 1).—The case is interesting as regards the explanation given by the author of its causation by the employment of one or more vaginal douches (by mistake) of a temperature sufficient to cause destruction of the red blood cells. The limit of temperature above which evident changes of the red blood cells are noticeable is, according to M. Schultze (*Archiv f. mikrosk. Anatomie*, Bd. 1), 115°·6 F. The author requests observations of the urine drawn off by the catheter in any case where very hot injections are used after labour as, for example, in post-partum hæmorrhage.

ON THE CAUSE OF THE ONSET OF LABOUR, by Dr A. Geyl (*Archiv für Gynäkologie*, Bd. xvii. Hft. 1).—The author discusses at great length the various theories in regard to this subject. He shows that to Reil, and not, as is usually believed, to Simpson, is due the credit of first propounding the "foreign body" theory, and quotes from that author as follows:—"The ovum now as a foreign body stimulates the uterus and occasions its contraction;" and further, "In proportion as it (the ovum), in the course of labour, is pushed forwards and touches fresh parts of the uterine surface, its power of producing irritation becomes modified in relation to the design of the successive movements." His theory is that the uterus possesses a hereditary property of contracting at a certain time; that this time has been fixed by an adaptation between the uterus, the passages, and the fœtus, whereby the latter was retained and developed to the greatest extent consistent with its delivery in safety to itself and to the mother; and that this time has been perpetuated through generations. He then makes ingenious use of Ahlfeld's tables of the duration of pregnancy and of the length and weight of new-born children, as also of Michaelis's tables of pelvic measurements, in support of his argument.

THE CAUSE OF THE ONSET OF LABOUR IN THE HUMAN SPECIES, by C. Hasse (*Zeitschrift für Geburtshülfe und Gynäkologie*, Bd. vi. Heft 1).—The author states that the theory of the onset of labour as depending on fatty degeneration of the placenta appears to him to be accepted merely on account of the absence of a better. He gives as his theory that the onset of labour is determined by the effects of a certain proportion of the products of retrogressive metamorphosis circulating in the fœtal blood through the placenta, especially of carbonic acid, upon the nervous centres for the uterine muscular fibres, and that this is brought about in consequence of the changes in the fœtal blood currents, and consequent deterioration of the quality and increase of the venous character of the blood which passes out at the umbilical arteries. He then enters into a consideration of the anatomical changes in the fœtal heart and vessels which precede labour, and illustrates his remarks by a series of coloured diagrammatic representations of the fœtal circulation at various stages of intrauterine life, and of the circulation in the new-born child. Combined with the above he notes, of course, the development of the increased irritability of the nervous centres in the uterus which takes place towards the end of term.

THE "ABDOMINAL METHOD" OF SINGING AND BREATHING AS A CAUSE OF FEMALE WEAKNESS, by Clifton Ewing, M.D., Boston (Reprint from *Boston Medical and Surgical Journal*).—The author cites several cases of displacement of the uterus, where the only ascertainable cause was the use of the so-called "abdominal method" of singing. This plan consists in making use of forcible diaphragmatic respiration to increase the power and tone of the voice, and has, he states, become quite a rage in America. "One Boston teacher boasts that by '*proper practice*' such power may be acquired, that if a person be placed back against the wall, and a full-sized piano be moved up against the retracted abdomen, the latter, by the abdominal method, can be so forcibly expanded that the piano will be pushed rapidly away."

DETERMINATION OF THE WEIGHTS AND MEASUREMENTS IN A CHILD DURING THE FIRST AND SECOND YEARS OF LIFE, by Dr W. Herse (*Archiv für Gynäkologie*, Bd. xviii. Hft. 1).—The author gives a tabulated series of observations on the above. The average increase of weight he found to be, during the first year, 18·22 grammes daily, and during the second 7·38.

IBID., by E. Evetzky, *New York Medical Journal*, February 1881. —The author gives the results of numerous observations, both in tabular form and in charts. The whole paper is very full, and the charts interesting as showing the irregularity of growth during the first year. The average weekly increment he found to be 3·31 ounces, a result only slightly below that of Herse.

CLINICAL REMARKS ON THE DIAGNOSIS AND TREATMENT OF PRURITUS VULVÆ, by Alfred Wiltshire, M.D. (*British Medical Journal*, 5th March 1881).—The lecturer points to the fact of vulvar itching as often affording the first clue to the diagnosis of diabetes, as in stout people with no marked diabetic symptoms. This form of pruritus he ascribes to the growth of parasites being favoured by the presence of the sugar. He then tabulates the causes of the affection under local and general, and treats of each in detail. In regard to treatment, the cause has to be looked to, and cleanliness observed. Instead of soap, almond meal emulsion is recommended, and friction during drying is to be avoided. As a parasiticide, borax the lecturer has found most useful in most cases; and for the pruritus of pregnancy, where oidium albicans is present, nothing he has tried relieves more quickly than a lotion of sulphurous acid, which is also to be injected into the vagina. In senile cases he uses bromide of potassium as a lotion and internally, as also arsenic.

ON AN ABNORMALITY IN THE COMPOSITION OF HUMAN MILK (E. Godin, *Annales de Gynécologie*, February 1881).—The writer draws attention to a class of cases where, while the other constituents of milk are present in due proportions, the amount of phosphates is extremely small, rendering the milk, while it appears to be of excellent quality, incomplete as an aliment. He says that Adam's new method of analyzing milk allows of the determination of its various elements in three or four hours.

ON THE MOBILITY AT THE PELVIC ARTICULATIONS (Dr Korsh, *Zeitschrift für Geb. u. Gynäk.*, Bd. vi. Hft. 1).—The writer figures and describes some mechanical appliances by means of which he tested the above (post-mortem) in 18 cases shortly post-partum, in 8 after premature labour, in 3 after abortion, in 4 where there were large tumours of the uterus or ovaries, and in 11 non-pregnant women and men. The results of each experiment are tabulated, and he draws the following conclusions:—Pregnancy, as also large uterine or ovarian tumours, alter the pelvic joints so as to allow not only movement, but separation of them, and increase of the pelvic measurements in a way not found in non-pregnant women or in men. The greatest increase at the inlet is antero-posteriorly, at the outlet transversely, and twice the force is required to widen the inlet that is necessary for the outlet. Increase of the transverse at the inlet is attended by shortening of the conjugate, but increase of this latter does not affect the former. The number of confinements does not influence the mobility. Numerous other observations are given on the effect that widening the individual diameters has upon the others.

Communication to the Discussion of the Treatment of the Third Stage of Labour, by Dr Kabierske, Assistant in Freund's Clinique, Strassburg (*Centbl. f. Gynäk.*, No. 7, 1881).—The writer states that in the Strassburg Hospital the Credé method is not employed, and quotes from Credé and Spiegelberg as follows:—"The natural powers in a normal labour are sufficient for the terminating of the birth, and they accomplish the separation of the placenta more efficiently alone than when aided." He states "that the expectant treatment of the third stage in normal cases is without danger," and instances cases where the placenta was not expelled for as long as fifteen days post-partum, and where no bad results ensued. He claims that after expectant treatment the puerperium is far and away better than after any other, both as regards temperature and the rapid disappearance of blood in the lochia. As soon as the head is born, care is taken not to handle the uterus in any way, and in eighty per cent. of his cases the after-birth came away in under three hours, while the longest period noticed was twelve hours. When the membranes were adherent the patient's pelvis was raised, and the weight of the placenta, which was only partially supported, was allowed to complete the process, which it did at the latest within half an hour. The writer reserves certain cases as requiring interference either by the Credé method or by manual extraction, just as in the other stages of labour interference is sometimes necessary.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By William Craig, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

The Pharmacology of Chloral Hydrate.—M. Dmitrieff, in a recent inaugural dissertation published at St Petersburg, states that he has tested the effect of chloral hydrate, both clinically and experimentally, on unhealthy, badly granulating wounds. By excision of a piece of skin in dogs, and infection of the wound with trefying matter, he produced unhealthy ulcerating surfaces. ome of these he dressed with one or two per cent. solution of loral hydrate, while the rest were simply covered with a moist oth. The first very soon became healthy, and cicatrized before e others. The ulcers, on microscopic examination, were found overed with a layer of micrococci, which disappeared after two or ree days' dressing with chloral hydrate. These results were onfirmed clinically; and the writer has also shown that an equal uantity of a one per cent. solution of chloral hydrate destroyed in wenty minutes all mobility of the bacteria in a putrefying infusion f flesh.—*Philadelphia Medical and Surgical Reporter*, February 5, 881.

THE EUCALYPTUS AS AN ANTI-MIASMATIC.—Much and deerved attention has been attracted by the plantations of eucalyptus ocated by the Trappists on the pestilential Campagna, near Rome. A correspondent writes:—I learned that the malaria, which had itherto at this spot been singularly pernicious, has of late years ecome comparatively mild in type. This improvement is attributed ntirely to the growth of the eucalyptus trees which, to the number f 25,000, have been planted within the grounds of Tre Fontane. The shrubs are protected by wicker-work against injury during the first few years of growth, after which they are left to care for themselves. Those planted ten years ago have now reached a height of over thirty feet. The Trappists prepare a spirituous extract and an elixir from the leaves, both of which are strongly redolent of the odour and acrid taste of the eucalyptus. The extract they are accustomed themselves to take daily as a preventive rather than a remedy for ague. When the attack is actually imminent, nothing is found to answer so well as quinine combined with some purgative. My informant was evidently himself thoroughly saturated with malarial poison, the virulence of which in this particular locality may be judged of by the fact that it proved fatal to all the eighteen friars who first attempted to plant the eucalyptus in the district. As it is, the health of the fraternity has so far improved that all thoughts of abandoning the monastery and the work have now been given up.—*Philadelphia Medical and Surgical Reporter*, February 5, 1881.

ATROPINE, ESERINE, AND DUBOISINE.—Dr Albini, after experiments on dogs and rabbits, draws the following conclusion (*Il Morgagni*):—1. Duboisine and eserine instilled into the eye of the living animal produce their effects, which continue even after death. 2. Applied to the eye of a dead animal, they act for many hours after death, but in inverse ratio to the age of the animal and the time that has elapsed between death and the application. 3. If, a little before death, duboisine and atropine have produced mydriasis, the eye after death is still sensible to the action of eserine, provided it be fresh. Inversely, the pupillary stenosis due to eserine is changed to mydriasis by duboisine or atropine. 4. Equally concentrated, a solution of duboisine is more active than that of atropine and of eserine. Thus of two eyes of the same animal submitted, the one to duboisine, the other to eserine, the latter becomes mydriatic more easily by duboisine than by atropine, whilst the former sooner loses its pupillary stenosis under eserine than if it had been previously acted on by atropine. 5. The duration of the action of eserine is shorter in the cadaver than in the living body; that of duboisine, on the contrary, like that of atropine, is longer, that is to say, more persistent.—*Medical Press and Circular*, March 2, 1881.

Salicylate of Eserine.—The salts of eserine are usually unstable; Merck has therefore proposed the salicylate, which seems to keep better than its congeners now used in our formulæ (*La France Medicale*). The salicylate of eserine occurs in the shape of needle-shaped crystals, bright and colourless, soluble in 24 parts of alcohol and 130 of water at 16° C. Solutions to one-fiftieth are preserved limpid for a week. They redden slightly in diffused light, but without browning, like solutions of the sulphate. It is not generally necessary in ophthalmic work to use the salt so highly concentrated. The salicylate of eserine contains 66·6 per cent. of eserine and 33·4 per cent. of salicylic acid.—*Medical Press and Circular*, March 9, 1881.

Danger of Pilocarpine in Eclampsia.—M. Sanger publishes three cases of eclampsia treated by subcutaneous injection of pilocarpine in 2 centigramme (0·308 grs.) doses (*La Presse Medicale Belge*). The crisis seemed to yield, but the patients experienced suffocative symptoms from inability to swallow the saliva. Two died. Pilocarpine is a very dangerous remedy in these cases, as the coma stops the reflex actions necessary for the swallowing of the saliva.—*Medical Press and Circular*, March 2, 1881.

PERISCOPE OF OTOLOGY.

By Dr Kirk Duncanson, Surgeon to the Ear Dispensary, 6 Cambridge Street; Assistant-Surgeon, Eye Infirmary; Lecturer on Diseases of the Ear, Edinburgh School of Medicine.

Primary Epithelial Cancer of the Meatus.—A case of primary epithelial cancer is described by Delstanche, which began as a small nodule upon the inner surface of the tragus of the right ear, accompanied by severe pain in the ear and over the side of the head. This soon ulcerated, destroyed the tragus, and extended into the meatus, leaving a surface destitute of epithelium and covered with small growths resembling granulations, which, on microscopic examination, showed the characteristics of epithelial cancer. At the end of eight months the patient died, having gradually lost the sight of the right eye, the sense of taste and

smell—the disease having steadily progressed till nearly the whole of the temporal and sphenoid bones had been destroyed.—*Archiv für Ohrenheilkunde*, Vol. xv. 1, Delstanche (fils).

CASE OF PERFORATION OF MEMBRANA TYMPANI FROM ASCARIS LUMBRICOIDES.—The patient, a woman aged thirty-five, three or four months advanced in pregnancy, was first seen on March 3d 1880. She was in a low nervous state, and had been suffering since Christmas from nausea and vomiting. About two weeks previous she had vomited several round worms whilst suffering from dyspnœa and intense pain in the chest and abdomen. Shortly before Dr Reynolds's arrival she had vomited two, and three more worms had escaped from the nostrils after an attack of epistaxis lasting three or four hours. Four grains of santonine powder were given at bed-time, after taking which four worms were passed by the bowel, none having previously passed per anum. The santonine was followed in the morning by fifteen grains of compound scammony powder, which brought away a great many more worms in the stools. Three or four hours after taking the scammony powder, and having previously suffered all night from intense earache, a neighbour discovered a worm protruding from each ear, and both ears bleeding; the same day three others came away from the ears—two from the left and one from the right. The following morning, 5th March, her husband drew another from the ear, and again on 8th March, this last four inches long, with the diameter of a small goose-quill. A large number were also discharged each day by the bowel, making in all seventy-four. 12*th May*.—For the last few days blood has trickled from her ears and down her throat, which she coughs up. On examination with the auriscope there is now, as there was in March, excoriation of either meatus, and a large perforation of both membrana tympani, but the sense of hearing is very little impaired. Dr Reynolds states in his remarks, the history of this case appears at first almost incredible, but there can be no doubt the membranes were perforated by the passage of the ascarides. In addition to being vomited, some must have crawled up the œsophagus into the fauces; thence some found their way into the nasal passages, and others into the Eustachian tubes, perforating the tympanic membranes, and being discharged by the external auditory meatus.—*Lewis W. Reynolds, M.R.C.S. Eng.* (*The Lancet*, 23d October 1880, p. 653).

CASE OF ARRESTED DEVELOPMENT.—Dr Purefoy read the notes of a case which had lately come under his observation. A farmer's wife gave birth, by natural labour and at full time, to a large male infant possessing the following peculiarities:—The right auricle was entirely wanting; its position, which was completely hidden by the thick black hair which covered the head, was only discernible by a slight depression where the external ear ought to be. The right eye also was represented only by a depression, the eyelids of the left one being adherent along their margins. There were double hare-lip and cleft palate. The tongue was absent, its position being marked by a depression. The genital organs were perfect. From the scapula hung, suspended by skin, the remnant of a hand, with the fingers webbed. The toes of the lower extremities were also webbed. The child was born alive, but survived only for a few hours. The cause assigned by the mother and her friends for this malformation was, that when she was three or four months pregnant a cow belonging to them gave birth to a calf whose two forelegs and right ear were entirely absent. This calf the woman watched for months, tending it constantly.—*Obstetrical Society of Dublin*, 5th February 1881; *The British Medical Journal* 5th March 1881, page 346.

CASE OF CONGENITAL MALFORMATION OF THE EAR.—Dr Belluzzi records a case of malformation of the external ear in a child, with the results of a post-mortem examination. The cartilage was wholly wanting, and the auditory meatus imperforate, while no depression or other sign of a passage through the temporal bone could be discovered. On examination after death the cavity of the tympanum was found much contracted, the malleus was destitute of the processus longus, the stapes was divided longitudinally, the incus was normal. The labyrinth and Eustachian tube presented nothing abnormal.—*Bulletino dello Scienze Mediche,* May 1880.

EMPHYSEMA FROM INFLATION OF THE TYMPANUM.—Professor Voltolini relates the following case of the above accident which he has recently met with:—Mr H., aged 28, suffered for several years from progressive deafness, arising from a cold. The watch was not heard with the left ear, and on contact only with the right, nor was it heard on either side from the mastoid process. No subjective noises were present. The external auditory canal and the drumhead, in either colour, texture, or movement, presented nothing abnormal, nor did rhinoscopy show anything diseased in the posterior nares or pharynx. The Eustachian catheter was easily passed, but one could hear by auscultation that the air entered the tympana in a very weak stream. The finest bougies (indiarubber, with olive-shaped ends) could only be introduced with difficulty, on account either of some narrowing or something projecting at the narrow part of the tube, or a sharp bending of the tube. As there was some improvement of the hearing from this procedure, the passing of graduated bougies through the Eustachian catheter into the Eustachian tube, hence through the constriction on towards the tympanum, was carried out. Immediately after the withdrawal of the bougie air was forced by means of the *ballon* along the catheter through the Eustachian tube into the tympanum. One day, on inflating the right ear with the *ballon*, after one of the thicker bougies had been passed the patient felt a sudden pain in the throat, and Dr Voltolini could trace a crepitating swelling with is finger, stretching from the right side well down on the right side f the larynx, and above the larynx to the left side of the throat. urther than a burning feeling on the right side of the throat, the atient experienced no inconvenience, and the catheterization, as rell as the passing of a bougie, was performed daily, but the air vas not blown in afterwards. With the left ear only the finer ougies were employed; but in spite of this and the greatest are, one day, while air was being blown in with the *ballon* after emoval of the bougie the patient jumped up suddenly and tried o spit something up out of his throat. On inspection the uvula vas found blown out with air, and looked as if a small swim-ladder of a fish were attached to the end of the soft palate, appearng more white than red at the upper part, and hanging down to he back of the tongue, giving rise to tickling with a tendency to iccough and choking. Several snips with the scissors in the disended uvula, and by the patient making several energetic attempts t swallowing, the swelling quickly and entirely disappeared. Naturally emphysema could be felt on the sides of the throat as far lown as the larynx. Professor Voltolini came to the conclusion that n the case of this fair, somewhat pasty-looking young man there was a peculiar flabbiness of the textures present, seeing the passing of the finest bougie could give rise to such damage, and at the same time to so extensive an emphysema from the simple application of he air-douche. This case, in the author's estimation, speaks strongly against the use of the compressed air pump for inflating the tympanum. If (he says) it had been employed in this case, it might have produced sudden death from emphysema in the larynx. —*Monatsschrift für Ohrenheilkunde*, No. 5, May 1880.

ON THE DISEASES OF THE EAR IN LOCOMOTIVE ENGINEERS AND FIREMEN WHICH MAY ENDANGER THE TRAVELLING PUBLIC.—During the last few years Dr Moos has been consulted for diseases of the ear by four locomotive engineers who had already resigned their posts for other reasons. These cases had this in common, that all four dated the origin of their deafness to the time when they still pursued their calling, that both ears were affected, and that the hearing was greatly diminished. Two of them suffered from constant subjective noises in both ears, one in one ear only, while the fourth heard no subjective noises at all. All four cases could be classified under the heading of *the sclerotic form* of catarrh of the middle ear. This fact led Professor Moos to turn particular attention to the subject in question, *especially as similar observations which he has since made in the case of locomotive engineers and firemen who were still on active duty had brought so vividly before him the danger which these affections might cause to the travelling public.* After describing several cases which have come under his observation, as well as quoting the remarks of several authors who have drawn special attention to the danger to the travelling public from the affections of the ears of engine-drivers and stokers, he goes to state that it is "now nearly thirty years since the French ra road surgeons began to pay more particular attention to the hea of the employés," and that there is a defect in the German la with regard to the reporting of all cases of deafness to the super tendent of the line. It is not binding enough on the railwa surgeons. Government or private railroad corporations shou keep their own interests in view in the appointment of surgeo for these examinations. They would be acting for their ow advantage in preferring one who has made a special study ophthalmology and otology. The multiplicity of positions o railroads gives numerous chances for employing deaf men otherwise than in the positions in which their hearing became affected; bu even a discharge from active duty on full pension amounts to nothing in comparison with the damages for goods and loss of li which depend on deafness for signals. Think also of the enormou sums often paid for damages in cases of accidents. As regards th frequency of the deafness, Dr Moos gives the expression of one engineer while undergoing repeated tests of his hearing: "If all of my fellow-engineers were tested as I have been, more than one-third of them would be found deficient in hearing." If affections of the ear in engineers and firemen are not so frequent as in others exposed to similar noxious influences, *e.g.*, hunters, foresters, machinists, etc.; if extensive statistics yield but a proportionally small percentage; and, further, if these diseases appear only *rar and exceptionally* in these men, nevertheless, the exception is important enough for the aural surgeon, in conjunction with competent authorities, to give the subject full attention in the future; for even the exceptional cases might lead repeatedly to danger for those who travel by rail. He sums up his paper with the following conclusions:—I. Locomotive engineers and firemen are liable to affections of the ear with noticeable decrease in hearing, usually in both ears, which may be attributed to their employment; these affections may, perhaps, appear earlier in those who are employed on railroads running through mountainous regions than in those on roads in level countries. II. This acquired deafness appears to be more dangerous than colour-blindness as regards the signal code, because the latter is a CONGENITAL defect, which can be defined precisely before the individuals are put on active duty, while the deafness is an ACQUIRED disease, slow in its approach, and often unknown to the person affected until an accident, *e.g.*, a cold or injury, diminishes the hearing more and more on one or both sides, or destroys it completely. III. The percentage of these affections of the ears can only be fixed by extensive statistics and examinations. The fact of its existence is evident; and even if the percentage were but slight, it is of great importance, for even a single exception may cause danger. IV. The ears should be examined very carefully before a certificate of fitness for duty is given; the examination can and should only be undertaken by a physician who has made a special study of otology, or at least understands how to examine the ear and to test its functions accurately. V. When a man has acted as fireman for a long time, his promotion to the position of engineer should demand especial precautions in this respect. VI. When his definite appointment has been made, he should be warned that his occupation MAY injure his hearing, and that he should present himself for examination when he notices the slightest defect in this respect. VII. The physician should be sworn to report every case of deafness in firemen or engineers to the superintendent of the road. VIII. The hearing of engineers and firemen should be tested at least once in every two years, so as to avoid all possible danger; perhaps oftener in those who run on tunnelled roads.—*Zeitschrift für Ohrenheilkunde,* Vol. ix. No. 4. p. 370.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

ON RHINOSCLEROMA.—Schmiedicke of Berlin, after an excellent *résumé* of the previously recorded cases of rhinoscleroma, recounts one which was under the care of Professor O. Simon of Breslau, and which is interesting both from its mode of originating and also from the beneficial results of the treatment adopted. He remarks that this is, as far as he knows, the first instance observed in Germany proper, and that none occur in English or French literature. As regards English, however, Mr Hutchinson has, in his *Lectures on Clinical Surgery,* recorded one example at least which corresponds in the closest manner to rhinoscleroma, though seated on the cheek, and not on the nose; but one of Hebra's was also localized there. The patient, a baker's daughter in Silesia, suffered in 1871 from a polypus of the left nostril, which was removed, and again, in 1876, of polypi of both nostrils, and soon after the growths for which she came under Simon's care in 1879 appeared. These were brownish-red in colour, glancing, weeping on the surface, which was either covered with a whitish-yellow liquid secretion or with crusts into which this had dried. They almost entirely blocked the nostrils, and these and the bridge of the nose felt hard as ivory. The soft palate became also invaded by the same cartilaginous-like growth. The tumours were painless, at least when not touched, and only occasioned a sensation of tension. After being two months under observation and treatment without improvement, she was dismissed with directions to apply locally cotton wool spread with an ointment of pyrogallic acid in vaseline, one in five, and to take Fowler's solution internally. Under continued use of the local treatment by pyrogallic acid for eight months the condition of the nose had so much improved that it no longer exhibited anything remarkable, though it had been previously much disfigured. Pyrogallic acid seems, therefore, the best weapon we possess at present for the repression of rhinoscleroma. As regards the commencement of the disease, Schmiedicke directs attention to the frequency in recorded cases with which a naso-pharyngeal catarrh with inflammatory hyperplasia has preceded the outbreak, many patients having noticed the formation of crusts in the nose before the disease showed itself. In this instance the polypi may have been the starting-point. The microscopic appearances indicated a growth allied to the sarcomata, including both round and spindle cells and cells with processes (*Viert.*, *für Dermatologie und Syphilis,* 1881, 2 und 3 Heft). In association with this it may be interesting to quote a passage from a work just published, viz., *Auspitz's System der Hautkrankheiten,* Wien, 1881, pp. 172, 173:—"I allocate to the granulomata of the skin a disease whose place in classification has not hitherto been satisfactorily determined, the rhinoscleroma of Hebra, that growth of almost cartilaginous hardness which starts from the nasal mucous membrane and tends to block the passages. Notwithstanding the coincident, nearly constant, and analogous morbid changes in the soft palate and vicinity, its non-syphilitic nature is proved in one portion of the cases, is uncertain in another, and is highly improbable in the last. The microscope invariably exhibits a round-cell infiltration occupying the entire corium, while production of spindle cells, contraction of areolar tissue, ossification, secondary lesions of epithelium, etc., are only occasionally and here and there met with. While at present many authors wish to define the process as sarcoma (granulation sarcoma, round-celled sarcoma) the sarcomatous diathesis seems to me not clearly proved. The definition as a chronic inflammatory process with contraction I hold as not permissible so long as one may equally well designate as such every small cell infiltration (for example, lupus, etc.), and yet lay down no clinical basis for this nomenclature. From portions of skin from rhinoscleroma investigated by me, particularly in some commencing cases, which are often enough treated under the most various diagnoses, I have satisfied myself that the round-cell proliferation, as to its arrangement and the disposition of its tissue elements, belongs entirely to the type of granuloma. I found, as in the latter, the starting-point in the adventitia of the vessels, and here and there even an alveolar structure, while aggregations of giant cells and epithelial cell-nests were not to be detected. But what has not hitherto been made out by observers, however much has been said about the hardness of the tumour, is the sclerosed condition of the bundles of areolar tissue, which is quite analogous to the syphilitic initial sclerosis as described by Unna and myself. This discovery explains the dense consistence of the new formation, which is neither to be sought in the cell roliferation nor in any other alteration of the tissues whatever. I ierefore place rhinoscleroma, retaining its present name, under the ranulomata, whereby I do not exclude the possibility that *someimes* the syphilitic process may be regarded as the starting-point f the granulations." Auspitz adheres to Virchow's definition of ranuloma as those diseased processes in which, combined with n abundant proliferation of cell elements, the embryonal condition s maintained with little change throughout, and includes under it upus, scrofuloderma, tuberculoderma, lepra (Asiatica), syphilolerma, rhinoscleroma, and granuloma fungoides. Though ulceration f any extent is almost unknown in rhinoscleroma, a case published y M. Zeissl is a remarkable exception, and is so far the only nstance in which extensive and penetrating disintegration of this iew formation has been distinctly made out. The patient was a man, a native of Galicia, aged 35. He had suffered from a slight and short attack of gonorrhœa when 17, but neither he nor his parents exhibited any trace of syphilis, nor did a long-continued antisyphilitic treatment exert the slightest favourable influence on the tumours. These affected the nose, the region of the lachrymal sac, and hard and soft palate. So far back as 1864 this person noticed that his sense of smell and capacity for nasal breathing were impaired. He thought that a fall on the nose while practising gymnastics might have been the cause. The tumours presented the appearances found in rhinoscleroma, especially the ivory-like hardness. In 1873 they ulcerated deeply, and in time the septum nasi was perforated. The man died in 1876, the disease having lasted twelve years.—*Wiener Med. Wochenschrift*, No. 22, 1880.

SEPARATION OF THE SKIN IN A LIVING INFANT.—Charrier exhibited in Paris a living infant whose skin was completely macerated. The umbilical cord was greenish-red, flattened, and loose; the entire cutaneous surface peeled off when touched, and appeared as if in a fœtus which had died six to eight days before in utero. The skin separated from the feet like a glove. Some days after the whole skin had fallen off except in three little spots, on the left thigh, the back, and right upper arm. The child looked better, assumed a natural colour, with normal temperature, and took on gradually even a thriving appearance. Neither a previous skin disease nor syphilis could be ascribed as a cause.—*Gaz. des. Hôpit.*, 124, 1879; *Viertelj. für Dermat. und Syphilis*, 2 und 3 Heft, 1880.

SEBORRHŒA.—Heitzmann recommends tar as curative not only of seborrhœa, but also of the baldness which so often results from its long persistence. He uses preferably the crude oleum rusei, a product of the distillation of the white birch. This is made into a pomade having the following proportions—

℞ Olei rusei crudi, ℥ss.
Ung. aquæ rosæ, ℥iv.
Olei rosæ, gutt. x.–xx. M.

The quantity of rose oil to be added depends somewhat on the wealth of the patient, as it is very expensive. The ingredients, the above proportions, must be mixed carefully and for a long time, since the more perfectly they are incorporated the less is the odour of the tar noticeable. Every night, on going to bed, a portion about the size of a walnut is to be rubbed thoroughly into the scalp, not merely into the hair, and the head then covered with a tightly fitting flannel cap. Any superfluous ointment is to be removed in the morning. Twice a week the patient should take a cold shower-bath of moderate force; and as often wash the head with water and Castile soap. In fourteen days the falling off of the hair ceases, in fourteen more the seborrhœa is gone, and fourteen days later a distinct new growth of hair can be observed. Heitzmann had thus treated successfully twenty-eight cases.—*Transactions of International Medical Congress of Philadelphia*, 1876.

Etiology and Treatment of Acne.—Denslow defines acne as a disease characterized by inflammation in or about the sebaceous glands, due either to a retention of sebaceous matter in the glands from oversecretion, or to accumulation of the same from inertia or inadequacy of the expelling force, also to a combination of these two causes. The expelling force he believes to lie in a great measure in the superficial unstriped muscular fibres of the skin, and the expulsion to be accomplished by their bringing direct pressure to bear on the glands themselves, and, through their alternate contractions and relaxations, regulating the superficial blood supply, thereby controlling as well that portion of it which maintains the proper amount of nutrition to the glands and to the vessels themselves. This inertia may be induced by many remote causes, but the acne often persists long after the primary cause has been removed. These views have led him to employ ergot, giving this continuously in half-drachm doses of the liquid extract three times a day. The cases so treated by him have been few, but the results were satisfactory.—*New York Medical Journal*, February 1881.

On Wasting or Simple Atrophy as it occurs in Young Children from Insufficient Nourishment.—Dr Storr remarks on the frequency with which such cases present themselves among the out-patients at a children's hospital. The disease occurs in two forms; 1, simple wasting, most frequently seen in children who are fed at the breasts of feeble, overworked, and underfed mothers. Such are cases simply of starvation; there is a gradual loss of plumpness, the muscles become flaccid, the face pale, the skin harsh, and the anterior fontanelle is level or slightly deressed, the bowels are costive, and there is no indication of isease in any organ of the body. The treatment of such a conition consists in improving the health and nutrition of the nother, and in partially or wholly substituting good cow's milk or the poor and innutritious milk of the breast. The second form s a more serious one, as well as more common. Here we have ymptoms of gastro-intestinal irritation associated with the wasting. t depends mainly upon an improper diet, and is oftenest met with where farinaceous food is given to the child, to the exclusion, in great part, of milk; combined with the improper food is very commonly found another cause, namely, the use of an imperfectly cleaned bottle. The popular feeding-bottle, with a long indiarubber tube outside and a narrow glass tube inside, reaching to the bottom of the bottle, is very difficult to keep clean. The milk curds within the tubing, and without the greatest care these curds are not entirely removed; they remain and go sour within the tube, turning the milk subsequently put into the bottle sour too. The old-fashioned bottle, with a simple soft indiarubber nipple, is a much safer and more useful article, as it can always be kept clean and sweet with a small expenditure of trouble. Milk thus rendered acid, and combined with farinaceous or other unsuitable food, speedily produces irritation of the alimentary canal, interferes with nutrition, and leads to a state in which the features of wasting and disordered digestion are combined. Besides the signs of wasting, there are found a voracious appetite, griping pains, sickness, and diarrhœa, and the child is soon reduced to an extreme degree. In some cases the symptoms closely simulate brain disease. In treating such cases attention to diet is all-important. One part of barley-water or lime-water to two or three parts of good fresh milk in a perfectly clean bottle, to which may be added from one to four teaspoonfuls of cream and a little sugar, is the most suitable food. Each meal should be prepared as it is wanted. After the digestion is in better order, one meal a day of thin mutton or chicken broth may be allowed to children about eight months of age. Several interesting cases are given.—*Philadelphia Medical Times*, November 6, 1880.

Part Fifth.

MEDICAL NEWS.

Dr William Smith Greenfield, London, has been appointed to the Chair of General Pathology in the University of Edinburgh, rendered vacant by the lamented death of Professor Sanders.

Mr William Mather, Manchester, has forwarded to us various samples of his porous and other plaisters, including belladonna, capsicum, mustard, strengthening, and surgeons' rubber adhesive plaisters. These are spread on flexible cloth, and are well adap for being accurately fitted to any part of the body. For m purposes they will be found more convenient than the ordin rigid plaisters so commonly used. The porous plaisters sent a excellent, and in convenient sizes. The idea of issuing th plaisters in bulk is a good one, as it enables the surgeon with t greatest ease to obtain a plaister of the exact size and shape required. We are pleased to see that this extends to the mustar plaisters. These are worthy of special commendation, and, like t others, are very flexible. We have much pleasure in commend these to the favourable consideration of medical practitioners.

List of Candidates who were successful for appointments a Surgeons in Her Majesty's British Medical Service at the Competitive Examination in London on the 14th February 1881.

No.	Names.	Marks.	No.	Names.	Ma
1.	Davies, A. M.	2320	21.	Younge, G. H.	16
2.	Hubbard, H. W.	2290	22.	Clements, W. G.	16
3.	Fitzsimon, P. C. C.	2090	23.	Babtie, W.	16
4.	Noding, T. E.	2065	24.	O'Brien, R. F.	16
5.	Yourdi, J. R.	1992	25.	Thiele, C. W.	161
6.	Culling, J. C.	1960	26.	Nichols, F. G.	15
7.	Hackett, R. J. D.	1955	27.	Cox, T.	15
8.	M'Geagh, R. T.	1950	28.	M'Laughlin, Jno.	15
9.	Trewman, G. T.	1910	29.	Fowler, Richard	15
10.	Johnston, H. H.	1900	30.	Creagh, S. H.	151
11.	Wilson, E. M.	1900	31.	Lambkin, F. J.	15
12.	Risk, E. J. E.	1895	32.	Reade, W. L.	14
13.	Davies, J. D.	1880	33.	Peard, H. J.	14
14.	Birrell, W. G.	1850	34.	O'Grady, G. S.	145
15.	Dundon, M.	1840	35.	Rennie, S. J.	142
16.	Lingard, T. R.	1830	36.	Carmichael, Jno.	14
17.	Magrath, C. W. S.	1830	37.	Farmer, E. D.	13
18.	Lane, A. V.	1780	38.	Creagh, G. W. B.	137
19.	Beatty, J. W.	1740	39.	Wilkinson, F. T.	137
20.	Weston, G. E.	1695	40.	Semple, J.	1345

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THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Quarterly Report of the Royal Maternity and Simpson Memorial Hospital.* By ALEXANDER RUSSELL SIMPSON, M.D., F.R.S.E., Professor of Medicine and Midwifery and the Diseases of Women and Children in the University of Edinburgh.

(*Communicated to the Edinburgh Obstetrical Society, 9th March* 1881.)

DURING the three months ending 31st January 1881 the duties of house surgeons were fulfilled by Mr R. Cathcart Bruce, M.B., C.M., and Mr Potts, M.B., C.M., who have drawn up for me the following record :—

There were 48 intern and 113 extern cases. The intern cases are reviewed under the three following heads: I. Pregnancy; II. Parturition; III. Puerperium.

I. *Pregnancy.*

Of the 48 cases, 26 were primiparæ and 22 multiparæ, as follows: ii. paræ, 11; iii. paræ, 4; iv. paræ, 4; vi. paræ, 2; viii. paræ, 1. The value of abdominal palpation and auscultation in obtaining accurate information as regards the presentation and position of the fœtus was shown in 39 intern cases thus examined before labour was far advanced, and in some cases many days before the commencement of labour. In *all* of these the diagnosis of *presentation* was confirmed by the subsequent labour, and in 34 the *position* also, the remaining 5 cases being noted as doubtful (before the advent of labour) owing to the free mobility of the fœtus to right and left of the middle line on palpation.

There were 3 cases in which the position of the fœtus in utero altered during the short period they were under observation.

In one case, a pelvic presentation having been diagnosed, was changed to that of a head by external manipulation. The version was favoured by a lax condition of the abdominal and uterine walls and the presence of a considerable quantity of liquor amnii in a multiparous female.

II. *Parturition.*

There were 48 children born, of whom 28 were males and 20 females. Of these 44 were born alive, the remaining 4 being stillborn, and bearing evidence of being dead in utero some days. The classification of the labours was: (*a.*) Natural, 39; (*b.*) Laborious, 3; (*c.*) Preternatural, 4; (*d.*) Complex, 1.

(*a.*) Of the natural labours, the position of the vertex was—in 21 cases L.O.A., in 15 R.O.P., in 2 L.O.P.

(*b.*) Of the laborious cases, the position was—in 2 cases L.O.A., in 1 case L.O.P. The forceps[1] were applied on three occasions on account of delay in second stage from deficient uterine action. The children were alive, and the mothers made good recoveries.

(*c.*) Of the preternatural labours, 3 were pelvic, L.S.A. presentations, and 1 footling. One street birth occurred, in which the position of the vertex was diagnosed to have been R.O.P. from the position of the caput succedaneum, which was slight but distinct over the superior angle of the left parietal bone.

(*d.*) The complex labour was due to retention of the placenta.

Mortality. — 1*st*, The *maternal* mortality was 3 — 2 in the house, and 1 two days after removal to the Royal Infirmary. The causes of death were: 1. Septicæmia and crural phlebitis; 2. Gonorrhœal endometritis, salpingitis, and peritonitis; 3. Acute peritonitis and pneumonia. 2*d*, The *fœtal* mortality was 4. These fœtuses were putrid, and had been dead before labour set in. In three of the cases syphilitic disease of the placenta had caused the death, and in the fourth the death was traced to a fall a fortnight before labour. 3*d*, The *infantile* mortality was 2—one from defective vitality in a somewhat premature infant; the other was syphilitic as well as premature.

III. *Puerperium.*

Of the 48 cases, 37 completed the puerperium with little or no rise in pulse and temperature worthy of remark; 6 were left over till next quarter, doing well; 2 were discharged somewhat debilitated, having suffered from pelvic peritonitis, which, under the usual treatment by antipyretics, opiates, and counter-irritants, made a fair but somewhat prolonged recovery. The following is an abstract from the case-book of the three fatal cases:—

CASE I.—J. M., aged 29, primipara; last catamenia in the middle of March. Admitted 18th November 1880; delivered 18th November at 3.40 P.M.

Labour.—Pains began at 2 A.M., 18th November. Os fairly dilated

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[1] The forceps I now invariably employ—and with ever-increasing satisfaction—is the axis-traction forceps described in the September and October numbers of this Journal. With regard to an article in the February number, it will be enough to quote this sentence from a note which I lately received from Professor Budin of Paris: "M. Archibald Reith aurait bien dû lire attentivement votre mémoire avant d'ecrire son article. Il ferait bien de lire aussi le mémoire de M. Tarnier."

when admitted at 8.30 A.M. Presentation vertex; position R.O.P. On examining per vaginam at 10 A.M., the anterior fontanelle was felt low down and towards the left thyroid foramen, the posterior fontanelle being only just within reach and to the right posteriorly. At 12.30 P.M. the head was felt low down, flexion and a degree of internal rotation having taken place; the anterior fontanelle being high up towards the left acetabulum, the posterior easily within reach at a point opposite the right acetabulum. Left parietal bone presented, and the left ear of child was felt a little to the left of the symphysis pubis. At 3.40 P.M. the occiput was born beneath the symphysis, with external rotation to the right thigh of the mother. Attempts to expel the placenta by expression having failed, and the os uteri internum being found firmly contracted, at 4.25 P.M. (*i.e.*, 45 minutes after the birth of the child) it was agreed to give the patient chloroform, after which the hand was inserted into the uterus, the placenta freed from some attachments, and extracted with the membranes complete at 5 minutes to 5 o'clock. After extraction, ext. ergotæ liq. ʒj. was administered. The total amount of blood lost weighed 1 lb. 10 oz. No post-partum hæmorrhage.

Child.—Male, full term; length, 19⅛ inches; weight, 7 lbs. 12 oz.

Placenta.—Weight, 1 lb. 3 oz.; length of cord, 27 inches. A supplementary cotyledon (3 inches by 2¼) was connected by a neck of placental tissue to the main body of placenta.

Puerperium.—On the evening of 18th November the patient's temperature was 100°·2 F., and, with the exception of the following morning (when it was normal), was never below 100° till her death on the 28th, and even reached 104°·2 on the 25th, the eighth day of her puerperium. Symptoms of pelvic peritonitis were noticed on the third day, and were treated, as usual, by counter-irritation, aconite being given at the same time.

On the 22d (fifth day) patient complained of pain above the right knee, along the course of the internal saphenous vein; on the next day was seized with a severe rigor in the morning, after which her case became serious, and in spite of repeated doses of quinine her temperature remained above 100° F.

On the 27th there was painful swelling of both legs, which were cold and brawny, especially the left; the limbs were swathed with flannel soaked in decoct. papaveris, which gave much relief. Stimulants were now frequently given, but she never rallied, and died at 3.50 P.M. on 28th November. No post-mortem examination was allowed.

Notes of the Child.—On 27th November an erysipelatous blush was noticed over the middle finger of the right hand, the dorsum of the left hand, and to a slight extent over botb feet, nates, and scrotum. Was dressed with carbolic oil, 1 to 60, and sent out to nurse on 30th November, when the right middle finger was still red, but the other affected parts better. Died on 3d December 1880.

CASE II.—J. C., aged 18, primipara. Admitted 22d Novembe 1880; delivered 22d November.

Labour.—Pains began at 6 P.M., 22d November, frequent and severe in character, the os being fully dilated at 9.10 P.M. Presentation vertex; position L.O.A. Duration of first stage, 3 hours 10 minutes; second stage, 25 minutes; third stage, 18 minutes. Artificial interference; membranes were ruptured with finger-nail, the os being fully dilated.

Child.—Male, healthy; weight, 7 lbs.; length, 18½ inches.

Placenta.—Weight, 1 lb. 2 oz.; length of cord, 22 inches.

Puerperium. — On the afternoon following the delivery, complained of severe abdominal pain, with symptoms of peritonitis, legs drawn up, anxious expression; evening temp., 102°·2; pulse 112. Poultices applied over abdomen, and tinct. opii given internally.

24th November.—Temp., morning, 101°·2; evening, 105°·8. Abdomen being still tender, was painted with tinct. iodi., and in the evening quinine gr. v. every four hours was administered.

25th November.—Temp., morning, 99°·3; evening, 104°·2. Discharge offensive. Quinine continued.

26th November.—Temp., morning, 100°; evening, 103°·6. Respiration, 28 per minute; the bowels moved four times during the night.

27th November.—Still great pain. Wandering delirium set in; pot. bromide and chlor. hydrate āā gr. xv. given. Lower half of abdomen blistered. Morning temperature, 103°·8; evening, 104°·2; tinct. aconite min. doses every half hour was given; turpentine ♏viij. given every four hours, and tinct. ferri perchlor. ♏xv. every two hours.

28th November.—Pain still very severe, and sleeplessness; also distressing vomiting; injectio morphiæ hypodermica ♏vj. was given at 9 P.M. Morning temp., 103°·3; evening, 102°·8.

29th November.—Still great pain and distressing vomiting; ice given to suck; the tincture of the muriate of iron discontinued, and morphia injection repeated at 11 P.M. Morning temp., 102°·2; evening, 103°.

30th November.—Temp., morning, 102°·6. Being somewhat better, she was removed to Ward 24 in the Royal Infirmary, where she died on the morning of 2d December.

The *autopsy* was made by Dr D. J. Hamilton:—

Heart weighed 9 lbs. 3 oz. Pericardial sac contained ℥½ of yellow serum. Aortic valves competent.

Lungs.—Right pleural cavity contained ℥ij. of blood-stained serum.

Left Lung weighed 15½ oz., covered with recent fibrinous lymph, more especially posteriorly, very much congested. An opaque yellowish-gray patch about 2 lines long at the base, situated in the pleura, and probably a commencing abscess. The organ was ch congested and partially solidified, being apparently in a mencing state of croupous exudation.

Right Lung weighed 8¼ oz. Pleura covered with a coating of ent lymph, particularly the lowest lobe. There were some dge-shaped deposits in the organ, very much like commencing scesses, into which internal hæmorrhage had occurred; other- se like the left lung.

Liver weighed 68 oz.; about half fatty; some patches of recent mph on the surfaces.

Kidneys appeared to be natural.

Spleen weighed 5¾ oz.; covered with recent lymph.

Abdomen contained ℥viij. of yellow pus. Surface of intestines vered with recent fibrinous lymph becoming purulent. Omentum awn down to the right side, and adherent to the cæcum and de of the uterus. The mucous membrane of the bladder was uch congested, and in certain areas rough and granular. Mucous embrane of uterus much congested; opposite attachment of acenta on anterior wall was a firm, flesh-like projection, about the iape of a cock's comb, which appeared to be composed in great art of a vascular tissue. Cervix uteri much bruised. Three seem- igly small superficial ruptures of mucous membrane at upper part f vagina. On squeezing the Fallopian tubes a large quantity of us was expelled, and the tubes appeared to be distended with t; mucous membrane much congested. The left ovary contained corpus luteum. Size of uterus 6½ in. by 4.

CASE III.—M. S., aged 22, primipara. Admitted 4th Decem- er 1880; delivered 4th December. Last catamenia, 1st–4th March.

Labour.—On admittance was far advanced in the second stage, he child being born within twenty minutes after admittance. Pains began at 8 P.M. 3d December. Presentation, vertex; position R.O.P., diagnosed from the situation of the caput, which was situated ver the post. superior third of the left parietal; internal rotation having taken place before she came under observation. Duration of first stage, 7 hours; second stage, 7 hours 25 minutes; third stage, 15 minutes.

Child.—Female, alive; length, 20 in.; weight, 7 lbs. 1 oz.

Placenta.—Weight, 1 lb. 1 oz. Membranes were somewhat easily torn, and on expulsion were found to be detached from the margin of the placenta, except at one point for about an inch.

Puerperium.—On the morning following delivery was seized with a severe rigor. Temp. 102°·4, and pulse 75 in the morning; 102°·6 and 84 in the evening. Tenderness over whole abdomen, for which turpentine stupes were applied, and gr. v. of quinine every four hours.

Dec. 6th, i.e. 3d day.—Temp., morning, 102°·8; evening, 104°·8.

Pulse, morning, 86; evening, 98. Abdomen extremely ten painted with tinct. iodi, and a draught containing castor oil turpentine ♏x. and liq. morph. mur. ♏x. administered, after w the bowels were moved three times. Tinct. ferri perchlor. ter in die.

7th Dec.—Passed a better night, and felt relieved. Morn temp., 102°·2; evening, 100°·2. Pulse, morning, 72; evening,

8th Dec.—Discharge offensive; morning temperature, 10 evening, 103°·2. Pulse, morning, 70; evening, 84. As pain abdomen still continued, lower third of belly was blistered; sli diarrhœa checked by an astringent draught.

At 1.30 A.M. 8th Dec. was called to see patient. She w wandering, with a tendency to delirium, and now for the first ti breathing was noticed to be shallow and rapid. On percussio note slightly impaired over left apex and right lower lobe; auscultation, crepitations were to be heard over both sides, w harsh breathing.

9th Dec.—Respiration 36 per minute. Pulse, 94 per minute the morning; 102 in evening. Temp., morning, 101°·6; evenin 104°·8. As diarrhœa continued, a starch enema with ♏xx. tinct. opii was given, which gave relief. Brandy ℥ij. every two hour and a mixture containing ammonia, ether, and infus. senegæ ever three hours—the sputum being viscid, difficult to spit out, an slightly tinged with blood.

10th Dec.—Respiration 52 per minute. Pulse in the mornin 100; in the evening, 102. Temperature, morning, 99·2°; evenin 100°. In the evening respirations were deeper and less rapid; stimulants continued.

11th Dec.—Bowels still relaxed; starch enema repeated at 1 P.M., and again at 5 P.M.; at 12 P.M. patient evidently sinking.

12th Dec.—At 1 A.M. in articulo mortis; pulseless; ♏xx. o ether injected subcutaneously, which caused radial pulse to return, but only for ten minutes. At 1·45 A.M. the patient sank. N post-mortem examination was made.

Extern Cases.

There were 110 women delivered.

Labours were classified as—

Natural labours,	94	110.
Laborious,	4	
Preternatural,	3	
Complex,	7	
Abortions,	2	

All four *laborious* were delayed 2d stage from inefficient uterine contraction. Forceps used.

Preternatural.—Three pelvic and one footling.

Complex.—Accidental hæmorrhage, 3.
Post-partum, 2.
Retained placenta, 2.
Mortality.—(1.) Maternal, *nil.*
(2.) Fœtal, 4.
(3.) Infantile, 2.

It is but right that I should state, in connexion with this distressing mortality, that when I came on duty in the Hospital there was a patient suffering from a pernicious pelvic inflammation, who could not at once be removed to the Infirmary. The stringent antiseptic measures introduced by Dr Croom were continued in full force. The first of the three patients presented no peculiarity at the hour of my morning visit, and the house-surgeon had been careful to disinfect his hand before introducing it into the uterus for the removal of the placenta.

The second patient was a clear illustration of the risks of gonorrhœal colpitis in advanced pregnancy. She was a puella publica, somewhat under the influence of alcohol when admitted in advanced labour, with some warty bodies on the vulva.

ARTICLE II.—*The Dangers of Chronic Suppuration of the Middle Ear, and their Prevention.* By ROBERT SINCLAIR, M.D., Physician to the Dundee Royal Infirmary, and Physician to the Aural Department.

A HUNDRED years ago Heberden, in those *Commentaries* which are the delight and admiration of every educated physician, wrote the following passage:—"If the generality of deafnesses be not incurable, a discovery of the proper remedies is one of the many desiderata in the art of healing."[1] The many genuine advances in the healing art since Heberden's time have been very largely the outcome of "the slow guide of experience" from which he himself learned and anticipated so much. But other causes have not been wanting. There is perhaps no branch of medicine, if we except ophthalmology, in which more has been achieved by laborious anatomical and physiological study than in the diseases of the auditory apparatus. Thanks to the combined result of the exertions of such anatomists as Vesalius and Valsalva, of physiologists like Helmholtz, and of practitioners like Sir William Wilde and Hinton, we are now in a position to say that the great majority of ear diseases are not only curable, but, if treated sufficiently early, are capable of being brought to a successful termination by any well-educated general practitioner who will cease to regard them as the sacred mysteries of the specialist, and is willing to bestow a little of that attention that is so largely expended on the os uteri.

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[1] *Commentaries on the History and Cure of Disease*, 4th ed., p. 60.

The disease which is the subject of this paper is only one of many that have systematically received the cold shoulder of the profession. Why this should be so in the present instance, at all events, is not at first sight obvious, for its recognition is within the easy reach of every medical man, and its treatment is not more difficult than that of many maladies which are combated successfully every day by the rank and file of the profession. Yet every one who sees much of ear diseases is painfully familiar with two reasons assigned by medical men for allowing tympanic suppurations to proceed unchecked—that they cannot be cured, or *that* they should not be cured. The former answer presumes an amount of intractability which belongs to few suppurations in otherwise healthy individuals; the latter ignores the anatomical seat of the disease. I suspect the true secrets of this neglect are the want of adequate teaching of aural surgery in most medical schools till a very recent time, and the fact that the morbid condition itself is concealed from ordinary view, the import of its more obvious symptoms not being clearly apprehended.

It is not my intention to enter into an exhaustive description of the anatomical relations of the tympanum, or to detail at length the causes of the inflammatory affections to which it is liable. My purpose is mainly to demonstrate, first, the indisputable fact that the life of a person suffering from suppuration of the middle ear is not worth twenty-four hours' purchase, and second, that he can be rescued from a condition of grave peril, to say nothing of inconvenience, by the enlightened and diligent adoption of the most elementary principles of surgery.

Let me, in the first place, point out the dangers of *neglected* suppuration of the middle ear:—Impairment of general health; deafness of various degrees; deaf-muteism in children and *young* persons; exostosis; polypus; destruction of membrana tympani, ossicles, and labyrinth; anchyloses and adhesions of various parts of the tympanum; caries of mastoid; caries and necrosis of pars petrosa; Eustachian obstruction; facial paralysis; hemiplegia; albuminuria; meningitis; cerebral and cerebellar abscess; pyæmia; lobular pneumonia and pulmonary gangrene; hæmorrhage from internal carotid artery and internal jugular vein. This formidable array is not an enumeration of mere possibilities. It is a list of actual conditions which have time after time been witnessed *and* recorded by perfectly reliable observers. Indeed, I question if inflammation of any other single organ in the human body can be charged with anything like the same number of inconvenient and serious results.

The following cases which have come recently under my notice—the first and second under my own care, and the third under that of my colleague Dr Duncan—illustrate some of the more serious results of neglected suppuration of the middle ear:—

CASE 1, as was suspected during the short period the patient was under observation, and as was proved by the post-mortem examination, was a case of abscess of the brain.

CASE 2 was unquestionably a case of pyæmia, as the clinical record sufficiently shows, though we had not the advantage of an examination of the body after death.

CASE 3, unfortunately, also lacks the completeness which would have been obtained had a post-mortem examination been procurable. But there can be little, if any, doubt that this patient died of blood-poisoning originating in chronic tympanic suppuration, the pneumonia being clearly enough explained on the theory that infective material had entered the venous circulation by one of the cranial sinuses, probably the lateral.

CASE I.—*Chronic Suppuration of the Right Middle Ear; Cerebral Abscess; Death.*

G. G., æt. 22, mill overseer; admitted January 10th, 1880.

History.—For many years patient has had a purulent discharge from the right ear. On the 29th ult. he spent a considerable time on the Esplanade, looking at the wreck of the Tay Bridge, and is supposed to have caught cold then. Has been more or less delirious ever since. For the first three nights had no sleep; but on the fourth night he slept after a hypnotic, and was considerably improved next morning. The improvement in the symptoms lasted for some days. Last night, however, he became very violent, and continued so till this morning, when he became unconscious. He has taken very little food for the last week, and his bowels have been very loose.

On Admission.—Patient is unconscious, and is almost constantly making automatic movements, singing and talking loudly and incoherently. Limbs rigid. Neck becomes strongly arched backward whenever touched. Both eyes flushed, the right more so than the left; right pupil only half the size of left. Teeth coated with sordes. Tongue dry and brown. Breath has an offensively sweet odour. Pulse 132, regular, but compressible. Respirations 54. Distinct redness and swelling over right mastoid and its immediate vicinity.

Treatment.—On syringing the ear with warm water, a little blood and some flakes of epithelium and pus were removed. An incision an inch in length was made through the skin and the mastoid process, but only blood escaped, and the bone was not spongy. Five-grain doses of quinine every three hours were ordered; but neither this nor the preceding treatment was of any avail, and the patient gradually sank till he died, six hours after admission.

Sectio Cadaveris.—On opening the head an abscess about the size of a hen's egg, and having a direct communication with the middle ear, was found in the right posterior fossa, between the brain and the dura mater. The dura mater over the abscess was black and sloughing, and the surface of the cerebellum, which had been pressed on by the abscess, had also a sloughy appearance.

CASE II.—*Chronic Suppuration of Right Middle Ear; Pyæmia, Death.*

G. M., æt. 32, bricklayer; admitted April 27th, 1880.

History.—Purulent discharge from right ear for the last three years. A week ago was seized with severe pain in right side of head, and was obliged to take to bed, where he has remained till now. No diarrhœa or abdominal pains. Has had repeated rigors.

On Admission.—Patient looks depressed, and complains of headache, weakness, thirst, and anorexia. Tongue dry and coated. Pulse 112. T. 102°·2. Examination of chest negative.

April 28th.—M. T. 100°. Urine dark amber, 1015, acid; no deposit; distinct albumen.

Examination of Right Ear.—Meatus blocked with cerumen and inspissated pus, on removing which a large perforation was observed in anterior segment of membrana tympani. No polypus.

Treatment.—Six leeches to front of ear, to be followed by fomentations. 5 grains of quinine every two hours, and 2 ounces of black draught. Ev. T. 98°. Leeches bled freely. After four doses of quinine patient had a rigor of fifteen minutes' duration, followed by clammy sweats. No sickness. Has taken nourishment fairly. 10 P.M., T. (very soon after rigor) 102°·8. 12 P.M., T. 104°·8.

29th.—3 A.M., T. 104°·4. 8 A.M., T. 102°; P. 96. Slept well. Bowels have moved freely. Perspiring very freely. Ev. T. 101°.

30th.—M. T. 101°·2; P. 108. Examination of chest negative. 3 P.M., T. 100°·2. 6 P.M., T. 103°·6. Rigor in afternoon. 9 P.M., T. 104°·4. 12 P.M., T. 101°·4.

May 1st.—3 A.M., T. 100°. 6 A.M., T. 103°·2; P. 120, much feebler than yesterday. Headache less severe. Has had some purulent discharge from ear. 12 noon, T. 102°·8. 3 P.M., T. 101°·6. 6 P.M., T. 101°·4. 9 P.M., T. 104°·4. Quite sensible. No rigor since yesterday. No cough or dyspnœa. 12 P.M., T. 103°·2

May 2d.—3 A.M., T. 101°·4. 6 A.M., T. 100°·8. 9 A.M., T. 104°·4. Has had a quiet night. In early morning became unconscious. No cough. Resps. 50, laboured. Countenance sallow. Tongue thickly coated. P. 120, steady, but compressible. 1 P.M., T. 103°·8. 4 P.M., T. 103°·6. 7 P.M., T. 103°·2. 11.10 P.M., died.

CASE III.—*Chronic Suppuration of Left Middle Ear; Pyæmia; Pneumonia; Death.*

J. M. L., æt. 18, domestic servant; admitted under the care of my colleague, Dr Duncan, May 11th, 1878.

History.—Acute suppurative inflammation of left middle ear ten years ago. Chronic discharge of pus since then. Has had several blisters applied behind both ears with no benefit. She came to Dundee three months ago, and has been in very indifferent health during her residence here, suffering from loss of appetite and general weakness. Five days ago she had a shivering, followed by pain in the left side of head and bowels, the headache being attributed by her to cessation of the discharge, which, however, reappeared two days later. Catamenia always normal.

On Admission.—Patient is somewhat deaf on left side. Aspect febrile, but not distressed. Gives a fairly intelligent account of her illness. Pain in head continues. P. 96; T. 103°·6. No perspiration. Tongue coated. Bowels regular. Complains of slight cough. Examination of chest negative. Ev. T. 104°.

12th.—T. 103°·8. Complains of pain in left side of chest, difficulty in breathing and coughing. Sputum dark red. Tenderness and friction râle in left anterior and lateral regions. Ev. T. 102°.

13th.—P. 132, weak; R. 64; T. 103°·2. Patient is much distressed, and slightly livid. Decubitus on right side. Urine dark amber, acid, 1024; considerable albumen. Percussion impaired over lower half of right back of right lung, with fine crepitation. Over greater part of right lung, as well as left, loud sibilant râles. Ev. P. 152; T. 102°. Patient is in great distress, and is much more livid than in morning.

May 14th.—Died at 12.40 A.M.

Treatment.—A patient suffering from chronic suppuration of the middle ear as a rule requires attention to the following conditions:—Catarrh of the naso-pharyngeal space and of the Eustachian tube, with partial or complete closure of the latter; suppurative inflammation of the mucous lining of the tympanum, and in some cases caries of its bony structures; perforation of the membrana tympani; defective hearing power, and impairment of general health.

1. The naso-pharyngeal space is usually the starting-point of the malady, and may have recovered by the time the patient comes under treatment; but in a very large proportion of cases it will be found in a state of chronic catarrh. If so, it is necessary to bring it intó a healthy condition by cleansing and tonic applications. To begin with, the excessive use of alcohol and tobacco must be interdicted. A gargle composed of a saturated solution of chlorate of potash; or of common salt, one drachm to half a pint of water, should be used twice daily. Should the mucous membrane of the nasal passages be much or chiefly affected, I know of no better means of initiating healthy action than by the use of weak and warm alkaline lotions thrown down the nares by the post-nasal syringe, which I have used regularly ever since my attention was drawn to it in an excellent paper read by Mr Lennox Browne before the British Medical Association at Sheffield in 1876. I can quite corroborate every word of Mr Browne in praise of this in-

strument. Time after time I have with its aid removed larg masses of inspissated secretion which nothing else could hav reached so safely, and I have never found any complaint of pain fro its use even in very young children. When the products of inflammation have been thoroughly cleared away, inhalations of stea medicated with carbolic acid, creasote, pine oil, or tincture of benzoin should be used daily, and forced into the Eustachian tubes by the Valsalvan method. This plan of treatment not only serv to bring the naso-pharynx into a healthy condition, but hel materially to keep the Eustachian tube open—an end that is still further attained by the weekly or bi-weekly use of Politzer's inflator.

2. *The Suppurating Surface.*—Up till a very recent time it was the usual practice to treat chronic tympanic suppurations by means of warm astringent solutions of varying strength and composition. which in many cases yielded admirable results. But their use was attended with some disadvantages, among which may be mentioned the difficulty of ensuring thorough application, especially among dispensary patients; the pain and irritation induced; and the risk of fresh inflammation in patients exposed to great changes of temperature.

Considering the wonderful revolution which has been effected in surgery by the antiseptic method of Professor Lister, it is not astonishing that attempts should have been made to secure some of its advantages for the treatment of this obstinate malady; although it must be obvious to any one acquainted with the teaching of the great founder of antiseptic surgery that its strict adoption is impossible here. What may be termed a *limited* antisepticism is, however, not only possible, but has been proved by ample experience to be a very important step in advance of the astringent method. A necessary preliminary to antiseptic as to any other treatment of a suppurating tympanum is, in my opinion, thorough cleansing with a warm alkaline solution. The patient holds his head over a basin. and the stream is forced through a brass syringe (fitted with a conical nozzle to prevent reflux) along the external meatus, through the middle ear, Eustachian tube, and nasal passages. By this means the entire tract is cleared of pus and mucus. Inflation with Politzer's bag is then practised to drive the water remaining in the tympanum into the external meatus. Finally, the parts within reach are carefully mopped with a piece of absorbent wadding fixed on a bent aural probe or rectangular forceps, and the antiseptic treatment may be commenced.

As it is one of the unquestionable advantages of the new method that dryness of the parts is aimed at and obtained to a very large extent, all routine syringing must be avoided. I am well aware that many excellent authorities exclaim against washing of the suppurating ear at all, and adduce as their reason the irritation produced on the delicate structures by moist applications. Still I can see no objection, and have seen much benefit, from a thorough preliminary cleansing with water, and its repetition when pus has accumulated in inconvenient quantity. Such procedures, indeed.

ppear to me to be justified equally on theoretical and practical grounds.

When the parts are thoroughly cleaned, either in the manner already indicated or by mopping up the discharge by means of absorbent wadding, the drug selected should be blown into the meatus and tympanum with the aid of an ordinary powder-blower. As often as necessary this should be repeated. The dry antiseptics mostly in use are salicylic acid, boracic acid, and iodoform.

Salicylic acid has been highly recommended by, among others, Dr Cutler, in the *Maryland Medical Journal*, July 1879, and by Dr Chisholm[1] of Baltimore. My experience of it has not been extensive; but, so far as it has gone, it has not been favourable. It has frequently caked in a very troublesome way, and, on the whole, produced so little beneficial effect that I was not long in abandoning it in favour of

Boracic acid in the form of impalpable powder. This remedy has been very strongly urged on the notice of the profession by Drs Bezold,[2] Becker,[3] and Cassells.[4] I have used it very largely for some time past in two ways—blowing it in by the powder-blower, and packing the meatus thoroughly in the manner recommended by Dr Cassells. In the slighter cases I have frequently obtained good results; but in the more severe the treatment has been very prolonged and tedious. The caking, which was a drawback to the use of salicylic acid, was scarcely if at all less troublesome with the most finely pulverized boracic acid. This disadvantage has also been commented on by Dr Pierce[5] of Manchester. I have by no means abandoned boracic acid, but my first hopes from it have not been realized.

Iodoform was recommended first, I think, by Dr de Rossett, and has been lately extolled by Czarda.[6] It is applied in the same way as salicylic and boracic acid. Scarcely anything in my experience of aural therapeutics has given me so much satisfaction as this remedy. The rapidity with which both fetor and pus in very old-standing cases disappear under its use is truly astonishing. In the most inveterate cases I have seldom found it necessary to make the application oftener than twice a week. While I do not claim for it infallibility, or anything approaching such a position, I believe iodoform, properly applied, will lighten the labour and anxiety of those who undertake the treatment of tympanic suppurations more than anything else which has hitherto been advocated. Its objectionable odour may be very largely mitigated by trituration with a fourth part of tannic acid.

3. Defective hearing power is to be treated in the usual way by Politzer's inflator and the Eustachian catheter.

4. The necessary measures for the restoration of general health are too well known to require any enumeration.

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[1] *London Medical Record*, Nov. 1879. [2] *Ibid.*, Oct. 1879. [3] *Ibid.*, Oct. 1879.
[4] *British Medical Journal*, 4th Sept. 1880. [5] *Ibid.*, 4th Sept. 1880.
[6] *Specialist*, Oct. 1880.

ARTICLE III.—*The Influence of Antiseptics upon Legal Medicine: a Lecture delivered in the Course of Clinical Surgery in the Munich Hospital, in the Winter Session* 1879-80. By DR J. N. RITTER VON NUSSBAUM. Translated by JAMES SCOTT, M.B.

(*Continued from page* 1003.)

I BELIEVE that law, justice, and duty all demand that every qualified surgeon should employ measures which have been demonstrated to be a sure means of safety, and, in short, I think it necessary that, in the present condition of surgical knowledge, definite rules should be laid down both for medical jurists and for practitioners. It should be insisted upon that medical jurists who examine wounds, and practitioners who treat them, should avoid those methods which have been shown to be certainly dangerous, and should employ those which are known to be useful and successful in restoring health. Thus the practitioner who performs operations or dresses wounds must not go direct from the post-mortem room or from an infectious case to the operating-table, or to dress a wound. It may not be necessary that the operator and his assistants should have a cleansing bath before each operation, and put on an entire suit of freshly-washed clothes, the practice followed by Hegar, Schröder, and others; yet it should be insisted upon, as the result of experience, that if surgeons have required to attend an infectious case (as diphtheria or pyæmia) or to be present at a post-mortem examination before they perform an operation or inspect a wound, they should at least change their coats and aprons and carefully cleanse their hands (not forgetting the nails), and then disinfect them thoroughly with carbolic acid.[1]

When the fresh wound is cleansed from blood and dirt, then well disinfected and dressed with some antiseptic dressing, there is already so much good done that one may say, "There will be here no unfortunate result, no diphtheria of the wound, pyæmia, erysipelas, protracted suppuration, deep and extending inflammation and pus formation, lymphangitis, or phlebitis; in a word, no septic process can go on, and the patient cannot therefore have severe fever, if he continues to be protected from mischief—that is, if at the changing of the dressings, or any inspection of the wound, similar precautions are observed."

[1] As in places where clinical and practical instruction is given the contact with dead bodies cannot be altogether avoided, I now follow the plan recommended by Professor Rüdinger, and inject all the bodies which are to be used for practising surgical operations upon with a mixture of carbolic acid, glycerine, and spirit, which seems to remove all the poisonous properties from the bodies, because the numerous small wounds which students receive every year in the classes for operative surgery, and which were formerly often followed by severe and dangerous phlegmonous inflammation, have not presented serious symptoms in a single instance since I have followed this method of disinfection.

In proportion to the certainty with which we can speak of this protection from mischievous results does it become imperative to insist upon the observance of these precautions, and it must not any longer be left to the free will of the surgeon to say whether he will employ this method or not. This is simply allowing the surgeon to choose whether he will let a patient run an avoidable risk or not, and such choice is manifestly inadmissible.

On the other hand, it is all the same which form of antiseptic a surgeon employs—carbolic acid, salicylic acid, chloride of zinc, or benzoic acid (? *sic*)—provided he examines and dresses the wound under the spray, or substitutes for it irrigation with carbolic lotion, which is more convenient in country practice and in military surgery. The surgeon escapes the reproach of being considered careless if he protects the wound from infection. How he will accomplish this is left to his own discretion, and his selection of any particular method will often be guided by existing circumstances.

Different methods and various antiseptic materials have been devised, but it must be observed that the method of Lister appears to be the best, and, so far at least, has never been surpassed. Every detail has been carefully thought out by Lister. No one will deny, for example, that washing the wound with carbolic lotion is not such a good protection against the elements of putrefaction as Lister's "spray;" and the "spray" has this enormous advantage, that the fine cloud does not irritate the wound nearly so much as washing with carbolic lotion. Lister wishes to render the septic germs inert with the "spray," while the wound is at the same time protected as far as possible from the irritation of the carbolic acid. This danger, the cause of a serious accidental wound-disease, is one which is not recognised by those who irrigate the wound with carbolic lotion. But this absence of irritation in the wound which the use of the "spray" leads to will not be obtained if too much of the irritating carbolic acid is brought into contact with the wound.

How carefully Lister avoids this risk is seen in his recommendation to employ his "protective." This non-irritating material is laid next the wound, so that the gauze charged with carbolic acid, which disinfects the secretions of the wound and purifies the air which passes in to it, does not come directly into contact with the wounded surface. A surgeon who omits any of these precautions, either intentionally or unintentionally, will not get such good results as he otherwise would; but his case is very different from that of the surgeon who does not employ them at all. Deaths and the risks to life will indeed be warded off by all employing antiseptics; but the nature of the cure, and the time required for its completion, will vary very much according to the knowledge, skill, and care of different practitioners. At all times surgeons have had different qualifications, and this is the case in our days also. Those who carefully carry out Lister's directions, and conscientiously emp the materials recommended by him in his published papers, see their cases heal up in a shorter time, and with less irrita and suppuration, than those other surgeons who, indeed, avoid t great risks, but who employ a much simpler form of antisepti treatment, such as washing the wound with carbolic acid or oth antiseptic agent, instead of using the spray-producer, and a some simpler form of dressing in place of the materials carefu selected by Lister. The patients who are under the care of the latter surgeons will certainly have more pain, suppuration will b more profuse and prolonged, and healing more tedious, but n serious accident will occur in the course of the cases. This is wh the State should aim at, now that science and practice have mad such progress that one can say that it is possible to insure a goo result; and this we can now promise with certainty.

From all this there spring various duties and observances whi are incumbent upon medical jurists. A medical jurist must, o the one hand, trust more to the discretion of practitioners, and, o the other hand, he may expect more from them.

In some cases he must, perhaps, criticise more leniently th medical reports when wounds are not described with perfe accuracy.

Hitherto it has been expected that the practitioners woul describe in their reports the precise length, breadth, and depth of wounds. There are, however, some cases in which to demand such particulars would now be quite unfair. Let me give yo an example of this. A practitioner is met on the road, and asked to see a man who has just been struck upon the head and seriousl wounded. He has no antiseptic materials with him except a smal pad of salicylic wool in his dressing-case; he has no carboli lotion, nor anything of that nature. He can, therefore, neither disinfect his finger nor his probe, and so cannot determin whether the bone is laid bare or fractured. In order to prote the wound from septic influences, and to insure the patien against risks, the only method he can adopt is to close up the wound with his salicylic pad. Perhaps the situation of the patient's residence prevents his being seen again by the practitioner till thirty or forty hours afterwards. At this visit the practitioner is provided with all the necessary antiseptic appliances; but when he exposes the wound under the spray he finds that the edges have united beautifully, and it would be out of the question to open up the wound afresh in order to ascertain its depth with a disinfected probe or finger, so as to be able to report as to this. When this practitioner reports as follows:—"I cannot say whether the bone was denuded or fissured, because I dared not examine it with a non-disinfected finger or probe at my first visit, and I had no antiseptic materials with me; while at my second visit, when I had antiseptic appliances at command, I found the wound already united, so that it could not be probed without causing injury," I consider that the medical jurist can take no exception to this statement, but, on the contrary, he must praise the caution of the practitioner. The most important law for a surgeon is always "Nil nocere." In this case there is healing under a scab, and it would certainly not be permissible to disturb this very satisfactory progress in order to make an exact diagnosis, which would not be of the least value to the patient.

Again, it is certainly the duty of a medical jurist, when he makes an examination of a wound, to pay attention to the mode of dressing employed by the practitioner who has treated the case, and some remarks made in a practical work by Dr J. Mair, entitled *Handbook for District Surgeons* (Würzburg, 1878), page 162, apply very appropriately to the circumstances just described. He says, "It will often be not merely advisable, but perfectly necessary, that the practitioner who is treating the case should be present at the examination of the wound; thus, sometimes serious consequences might result from the immediate removal of the dressings, and the practitioner can explain this, or the removal of the dressings might be left to the practitioner himself, a privilege he has a right to expect, as he alone is responsible for the treatment of the case." It is impossible to state more precisely or in better terms the amount of regard now due to practitioners than has been done in this same book. These remarks suggest a case in point. The medical jurist cannot tell with what care, or according to what method, the wound has been dressed; he does not know whether the practitioner has followed Lister's directions or used some simpler antiseptic. It may even be the case that the dressings should not on any account be disturbed.

Here is the illustrative case I have referred to: A young girl was run over, and received a severe lacerated wound of the thorax. The practitioner considered that the case was a very suitable one for the "Neuber-Esmarch permanent dressing," and accordingly dressed it in this manner. You know that under a single dressing of this kind, with a decalcified drainage-tube, large and severe wounds will often heal up in a few days. The practitioner had applied a substantial "Lister dressing" under the spray. On the fifth day came the medical jurist to examine the wound. I ask you, would it be proper to make this examination? Certainly not; for if the wound is exposed on the fifth day, this beautiful permanent dressing goes for nothing, and the practitioner must now dress the wound in a different manner; instead of fourteen days, the case will now require thirty days to heal up, and perhaps six dressings will be necessary instead of one. In a word, this examination of the wound would have made the employment of the permanent dressing impossible, and this is not admissible.

So long as the practitioner must bear all the responsibility of the case, there should be nothing done to the wound which he does not approve of, or which is not in agreement with his method of treatment. Now that dressings are so various and so complicated, and they are allowed to have so much influence on the result of the case, it is certainly advisable that the medical jurist should carefully follow the advice given in the *Handbook* from which I have quoted, and always have the practitioner present when he examines a wound, or, if that is not convenient, then at least to inquire beforehand as to the nature of the dressings which have been applied. If this is neglected, then from that moment all responsibility on the part of the practitioner ceases.

In other respects also must medical jurists be more careful in their observations and criticisms as to what practitioners have done or left undone. In cases of unsatisfactory results, or deaths following injuries, medical jurists will direct their inquiries as to whether the practitioner could or could not have warded off the unfortunate result.

The important point for consideration will always be, "At what time, or in what condition, did the wound come into the hands of the practitioner?" Hitherto it has been well known that accidental wound diseases were the great causes of risk after wounds and operations, but it was not known that it lay in the power of surgeons to prevent these. When a patient who had received a wound died of phlebitis and pyæmia or septicæmia, or of extensive erysipelas, no one thought of holding the practitioner responsible. It was merely said, "The patient died because erysipelas came on." Now the conditions are changed, and the question must be asked, "Did the case came under the care of the practitioner sufficiently early to enable him to ward off this attack of erysipelas."

If the wound was already bathed in foul-smelling pus, and the patient suffering from fever, at the time that the practitioner got charge of the case, then he has no responsibility. Still, perhaps, he might have made an attempt to render the wound aseptic. This often succeeds, and when it does, the conditions are as favourable as when the case comes at once under treatment. By carefully disinfecting the wound this fortunate result is so often obtained that one may almost make a charge of carelessness where the attempt has not been made. However, I do not wish to go so far, and will not class this as carelessness, because when a wound is already septic we cannot in any case speak with confidence as to the result beforehand.

Let me quote two examples to show that much good may often still be done when the cases are septic before coming into our hands.

In July last a student received a sabre-cut of the head in a duel, which ran parallel to the sagittal suture, to the left of it, and was 11 cm. long. The bone was denuded and laid bare, so that it

seemed like a fissure. One of his friends, a military surgeon, had cut away some of the hair, washed off the blood, and dressed the wound with olive oil and Brun's wadding. For five days it went on very well. The patient then wished to get up, and asked for more to eat. The surgeon, however, noticed a considerable swelling of the edges of the wound, and refused both requests. The next day, at 4 A.M., the patient had a severe rigor, and when the surgeon came he found some erysipelas, and the wound dry and smelling badly. The temperature, which had hitherto never been above 38° C., had now risen to 40°·7 C., and the patient spoke in such an excited manner that one immediately suspected the onset of delirium. The patient's relatives, who had now arrived, insisted that he should be brought to my clinic. This required a few hours' time to carry out, and when the patient came under my care, at 4 P.M., he was very delirious, had a temperature of 40°·9 C., a small pulse of 130 per minute, and the erysipelas had spread over the whole scalp. There was here a probability of getting that unfortunate termination which was formerly so much dreaded in all cases of severe head-injury. Evidently there had been foul-smelling pus pent up in the wound, and this had led to erysipelas. The septic condition of the secretions had affected the small blood-clots which lay in the deep crevices of the wound, and there could be little doubt but that secondary meningitis was imminent. I confess that, having regard to the severity of the septic symptoms, I had very little hope of being able to bring about a favourable state of affairs; however, careful disinfection is always useful and can never do any harm, so I had the patient put under chloroform, then I cut away more of the hair from round about the wound, washed the surrounding parts, which were soiled with blood and discharge, with a 5 per cent. solution of carbolic acid, slit up the overlapping edges of the wound with the scissors to such an extent that the whole floor of the wound was laid bare. By this means I could evacuate some foul pus and blood-clots, the retention of which had doubtless been the cause of the erysipelas and the serious symptoms. I dipped a pad of Brun's wadding in an 8 per cent. solution of chloride of zinc, and disinfected with this the whole floor of the wound, carefully washing and syringing the exposed bare bone. I then put two drainage-tubes in the wound, sewed up the other parts with catgut sutures, injected some 5 per cent. carbolic lotion through the drainage-tubes, washed the surface of the skin with the same, and then put on a Lister's dressing, but without "protective," so that the gauze, which was soaked in 2½ per cent. carbolic lotion, might come into direct contact with the secretions from the wound. I ordered the patient an acid drink and some light soup. He passed a quiet night, after getting a hypodermic injection of 2 cg. acetate of morphia. The next morning I was as much astonished as pleased when the patient, perfectly conscious, held out his hand and quietly wished me "Good morning."

The delirium was quite gone, the temperature was 38° C., and the pulse 98 per minute. Everything had changed so much for the better that we hoped the meningitis had been warded off. As the dressings had shifted a little, I changed them under the steam-spray, and found then that the wound was in a satisfactory condition. The erysipelas was quite gone, and there was no retention of the discharge. The temperature soon fell still further, and in sixteen days after his admission to my clinic the happy patient left for his home, having only a strip of plaister, about the breadth of a finger, upon the cicatrix on his scalp. This was a case of a septic wound being successfully rendered aseptic.

I must admit, however, that the cases do not always go on so well. A slight improvement may often be obtained by disinfecting wounds, but they cannot always be rendered thoroughly aseptic although they may not be so severe as the case I have just related. However, as I have already said, disinfection never does any harm but always good; it therefore seems to be indicated in every case.

As a second illustration I may relate a case which was recently under my care. A servant-girl was pushed from her chair in jest, and fell so heavily that she fractured her radius and ulna, and the ends of the bones protruded through the skin. A practitioner who lived near put adherent plaister upon the wound and bound up the arm in splints in the ordinary way; as it bled rather freely during the night, he sprinkled some styptic powder over the plaister. On the third day the arm was so much swollen, and there were so many blue and green blebs upon it, that the practitioner was afraid to go on treating the case, and called in another medical man, as the patient was strongly opposed to going into hospital. The surgeon who was called in requested to have a consultation with me, and spoke of the possibility of amputation being necessary. The mention of amputation caused great consternation in the house, for the foolish joke had been perpetrated by the son of the girl's master.

When I saw the patient the arm was greatly swollen and tense, the wound had a grayish surface, and was covered with foul-smelling pus; round about it there were also numerous blebs of different sizes. The small ones—about as large as a pin's head—were like transparent yellow glassy beads, and were very numerous, and lying close together; the larger ones were black and blue in colour, and filled with blood-tinged serum. There was high fever. The patient's countenance was of a yellowish-brown colour, and the morning temperature was as high as 40°·3 C. Under these circumstances I could not say positively that the arm might be saved; but, on account of the patient's youth and good constitution, I said that with the utmost care a good result might probably be obtained. Both the patient and her medical attendant gave me full permission to do what I thought proper.

I first put the patient under the influence of an anæsthetic. I then shaved the whole arm, washed it with 5 per cent. carbolic lotion, and let two steam-sprays play upon the wound. I made a semicircular incision, which extended about half round the arm, avoiding the nerves, etc., and by this means exposed the fragments of the broken bones lying at the bottom of the wound. The arm could then be bent in the middle, so that it was possible to have the floor of the wound thoroughly washed and purified with 5 per cent. carbolic lotion. (In cases where there is no bleeding, but only foul pus, I prefer to use the 8 per cent. solution of chloride of zinc.) I next ligatured some bleeding vessels, cut off the sharp ends of the broken bones, syringed and washed everything clean, put short drainage-tubes in each corner of the wound, and bandaged the arm on a splint, leaving the widely-gaping wound uncovered; over this wound—which was about half the size of an amputation wound—I put some absorptive gauze, and arranged that a 3 per cent. carbolic lotion should drop upon this day and night, the drops following each other so rapidly that they formed really a fine continuous stream. In twenty-four hours about 28 litres of this lotion passed over the arm. After two days, however, the wound became free from odour, and the temperature fell to 37°·7 C.–38°·2 C., so I diminished the irrigation considerably, and allowed from 16 to 18 litres of carbolic lotion to flow over the wound in the twenty-four hours. In a few days the wound looked so well that an ordinary Lister's dressing was applied, and the wound soon healed up like a fresh injury.

Such cases certainly show that the attempt should be made to change septic wounds into aseptic ones. The desired result does not, however, invariably follow; one can only say, therefore, "Perhaps it will succeed, perhaps it will not." It is not, therefore, advisable to make very great demands upon the practitioners in such cases. On the other hand, the antiseptic treatment of a fresh wound gives invariably such good results that it may be insisted that every practitioner shall and must employ it.

When one thinks it is now a recognised fact all over the world that wounds which formerly had a protracted and severe course, and frequently terminated fatally, can now, through the employment of the "antiseptic method," be healed up with certainty in a short time and without any risk; when one remembers that in medico-legal cases the punishment of the culprit is always regulated by the immediate and necessary result of the injury—that one and the same blow or stab may, on one occasion, be punished by four weeks' imprisonment, and on another by ten years in a convict prison;—it is devoutly to be wished that legal medicine would no longer ignore those great discoveries in surgery, but employ them for the good of those concerned.

ARTICLE IV.—*On a Complication of Occipito-Posterior Positions of the Vertex.*

By J. HALLIDAY CROOM, M.B., F.R.C.P. Edin., Physician, Royal Maternity Hospital; Physician for Diseases of Women, Western Dispensary; Lecturer on Midwifery, Medical School, Edinburgh.

(Read before the Edinburgh Obstetrical Society, 13th April 1881.)

THOUGH much has been written on the subject, occipito-posterior positions of the vertex offer a wide field for study. The frequency of this deviation from the normal standard is sufficiently marked to warrant us in endeavouring to trace out every complication which may accompany the position. Without detaining you with statistics, I should like to draw attention to the fact that, out of 414 births which have taken place in the new Maternity Hospital since May 1879 up till the present time, 59 occipito-posterior have occurred, *i.e.*, 14 per cent., or 1 in 7. In the present communication I wish to limit myself entirely to an inquiry into one of the complications met with in this form of cranial position. It may be broadly stated that the complications of occipito-posterior position resolve themselves into two sets—1. Those met with in the first stage of labour; 2. Those met with in the second.

During the first stage of labour occipito-posterior positions are unquestionably a common cause of delay. This delay is, no doubt, frequently enough incorrectly referred to simple rigidity of the cervix. In some cases there may be rigidity as a complication; but where the parts preserve their normal tone and elasticity, and where the head and pelvis are of normal size, delay in dilatation of the cervix from the position of the head alone is by no means an uncommon occurrence. The explanation of this delay is not difficult to discover. If a digital examination be made early in the first stage of labour, the finger will recognise, not the posterior fontanelle, but the anterior extremity of the sagittal suture. In other words, from the obliquity of the uterus and the resistance of the tissues in the neck, the occiput is carried against the pelvic wall of the uterus and the sacral promontory, and a certain degree of extension is the result.

Now, it seems that this degree of extension, this difficulty in completing flexion and of driving the flexed head into the pelvis and bringing it to impinge on the os uteri—constitutes the main difficulty in occipito-posterior positions all through labour. For the same reason the cervix suffers to a greater extent in occipito-posterior than occipito-anterior positions, the dilatation required in the one case being greater than in the other.

Meigs says, "When the vertex is to the front it enters the os uteri favourably, and passes through the orifice with a circumference of 10½ inches, or a circle of 3½ inches diameter; but when in a posterior direction, the latter acquires a circumference of 12½ or 13 inches.

A further complication is met with in the second stage when the resistance of the pelvic floor is encountered and rotation takes place. With any of the three possibilities of rotation there is delay. 1. *If forward*, there is double the distance to travel to that demanded in a first or second position. 2. *If backward*, the uterine force drives the head against the floor of the pelvis. The result is, instead of the head being pushed up from the floor of the pelvis and escaping under the pubic arch, it rolls back into hollow of sacrum under the sacral promontory. Here again the essential thing to do is to obtain flexion. It is no part of my present object to discuss the important practical question which here arises, whether we can hope for a change spontaneously or by art. The main point is to secure flexion. But a *third* possibility may occur, again, as a result of want of flexion, that is, when the pelvic resistance behind prevents descent and flexion, and when the head becomes jammed more or less transversely. It is to the result of the third possibility that the present communication has reference. Beyond the complications to which reference has been made, the increased laceration of the perinæum in these cases where the head is delivered persistently posterior, whether spontaneously or by artificial aid, must not fail to be mentioned.

The following cases are illustrative of the third variety of occipito-posterior, viz., those in which neither the anterior nor posterior rotations take place spontaneously, but where the head remains jammed between the lateral pelvic walls, and where, as a result, there is more or less extensive injury to the soft parts in the pelvis, this injury being uniform in its location and nature.

I. The first time the condition was brought under my notice was on beginning duty at the Maternity Hospital in August 1879.

It has been my habit ever since my appointment to the Maternity Hospital to examine each patient per vaginam on the tenth day post-partum. I am aware that objections have been raised to such a procedure. This is not a fitting opportunity to discuss these. I will only say that I have derived much valuable information from such examination. In many cases I believe I have been able to give useful advice to the patient, and, certainly in no case am I aware of having caused the patient temporary suffering or permanent injury. Carried out with ordinary antiseptic care, with gentleness, and with a due regard to the patient's feelings, I am unable to appreciate the objections that have been raised. On the contrary, I would strongly advocate a similar careful examination of each patient some weeks before delivery. Many complications might be foreseen, and accidents avoided.

The first post-partum examination I made on assuming duty in the Hospital in August was on a patient who had been left over from the previous quarter. The report by Drs Murray and Adam is as follows:—

6th August.—Perinæum torn down to within half an inch of anus. On the right side of the pelvic wall, in the region of the right ischial spine, there is a distinct opening. Its edges are smooth and incurved. It admits readily two fingers, is about an inch in length, and its direction, as ascertained by a probe, is downwards and backwards. Through the opening the ischial spine can be felt.

Left side normal.

Cervix forms but a slight projection; its edges are ragged and tender. It is bilaterally fissured, more deeply on the right side.

Uterus normally situated.

The examination causes no pain, except when the edges of the sinus are touched, when the patient cries out.

The previous history:—Patient, a multipara in her fifth confinement, each a forceps case, was delivered on the 28th July. The presentation was vertex, and the position right occipito-posterior.

The first stage was completed in five hours; second stage, three hours. Owing to the delay, forceps were applied, and the fœtus delivered with backward rotation of the occiput. On the patient's dismissal from hospital three weeks after delivery, the sinus was still open, and admitted a probe at least ¾ of an inch.

CASE II.—In private practice, a primipara, æt. 21. Labour began at midnight. At 8 A.M. I found the os well dilated. Head R.O.P. At 9 the membranes ruptured. At 9.30 the head had cleared the os, was descending R.O.P., with extension marked. The pelvis was deep. At 1 P.M., as no progress was made, a careful examination was made by Dr George Mackay and myself. We found head extended, the occiput lying just over the right iliac spine, in front of the oblique diameter.

Forceps were applied, and delivery easily effected. There was no attempt to rectify the position, but simple traction was made, resulting in the forehead coming under the arch of the pubes, and the occiput sweeping over the sacrum and perinæum. There was a considerable tear of the perinæum. The patient, it is to be observed, was in the second stage from 10 till 1, a period of three hours. The perinæum was stitched.

The patient required to have her urine drawn off for three days. She completed her puerperium without any pelvic pain, but with a slight rise of temperature. On the 10th day the stitches were taken out, and a per vaginam examination. Perinæum completely healed. On the right vaginal wall there is a deep sinus. The edges are smooth and bevelled. The wound easily admits the tip of the forefinger, and is not tender. On introducing a probe it is found to pass in one inch, direction downwards and backwards. Through the wound the ischial spine can be distinctly recognised. Muco-purulent discharge is profuse. At the end of six weeks:—The wound is felt almost closed. There is still a deep furrow. I had occasion to make an examination of the patient a year afterwards, and found the cicatrix well marked.

Case III.—An extern hospital case, seen with Dr Maculloch, resident physician, Royal Maternity. The patient, a young Irish woman, a primipara, had been in labour for fifteen hours, ten in the first stage, and five in the second. The pains were strong, and the head right occipito-posterior, but tending to transverse. I applied forceps, and delivered easily, not, however, without a considerable tear of the perinæum. There was backward rotation of the occiput. The pelvis was a deep one. The perinæal tear was immediately stitched.

The puerperium was uncomplicated. On 10th I removed the stitches, and found the following condition:—Perinæum healed. On the right pelvic wall there is a distinct laceration over the sacrosciatic lig. and the ischial spine, admitting easily two fingers. The edges are smooth, but tender; a probe enters readily 2½ inches upwards. There is a considerable muco-purulent discharge; cervix deeply torn on the right side. Uterus normal. With the further history of the case I am unacquainted.

Case IV.—Private practice. A lady, who had previously been delivered of her first child by a friend in the country, was recommended to me by him for attendance during her second confinement. Her first delivery was aided by forceps, owing to the backward position of occiput. I have no other particulars concerning it. Her second labour occurred on 10th December 1879, when I saw her at 10 A.M., she having been in labour since 10 the previous night. I found the head had passed beyond the cervix and was right occipito-posterior, the posterior part of head lying over the right ischial spine. The outlet seemed small, and the pelvis deep. At 12 noon, as no progress was made, I applied forceps and delivered a persistent occipito-posterior head. The perinæum, which had been considerably torn in her first labour, was not further injured.

On the third day she had difficulty in passing water, and on the fourth I had to draw it off with a catheter. This I had to do for several days. As I was anxious to know the cause of the retention, I made a vaginal examination, and found:—An old tear of the perinæum. On the right pelvic wall there is a deep laceration easily admitting two fingers; its direction is down and back; very tender; left side normal. Cervix deeply torn on the right side. The edge of the cervical tear is flush with the roof of the vagina. There was no constitutional disturbance worthy of note. The vagina was well washed out twice daily with an antiseptic lotion. At the end of six weeks the wound was rapidly closing, but it was three months before it absolutely healed.

Her next confinement took place in December 1880. When I reached the patient the head was well down in the pelvis, close to the vulva. The patient, who had always been averse to the attendance of a doctor, only allowed the nurse to send for me after she had been in labour ten hours, when she was worn out and desirous of having chloroform administered. I administered chloroform; and as the head was small and well down on the perinæum, I allowed nature to complete the case. The head was born with the occiput backwards half an hour after my arrival.

On the third day post-partum she again complained of retention of urine. Before using the catheter I insisted on a vaginal examination, which was submitted to with reluctance. I found the perinæum without any fresh tear. On the right pelvic wall I found a distinct solution of continuity sufficient to admit easily the tip of my forefinger. Its location was just over the site of the previous injury. The cervix was bilaterally fissured, the right side being the deeper; otherwise the parts were normal. Before leaving the patient at the month's end I was allowed an examination, when I found the sinus healing, but not closed.

The records of these cases show a marked similarity. In each there is a special cranial position, and a special pelvic lesion along with it.

Judging from the foregoing cases, given a right occipito-posterior position of the vertex, delayed in its rotation at a particular point in the pelvis, a more or less deep injury to the soft parts, resulting in a sinus, is likely to occur. Injuries and lacerations of vagina are common enough in labour with a contracted pelvis. Schroeder has drawn attention to this.

Dr Angus Macdonald,[1] in an instructive paper on occipito-posterior positions, makes a short reference to laceration of the soft parts. He writes as follows:—"Of those which terminated face to pubes, four of the mothers were primiparæ, and two multiparæ." In those six cases which ended as "face to pubes," in *one* case only, and that, too, a multipara, did there occur anything other than the most trifling laceration of the soft parts. In this case the laceration, which was not at all severe, affected the back wall of vagina without affecting the perinæal tissues. It soon healed up, and gave no inconvenience.

Both Schroeder[2] and Macdonald refer to these lacerations, but give them no definite location in the pelvic cavity. They both further refer them to the use of the forceps.

Let us now proceed to examine the vaginal lesion as met with in the cases recorded, as well as its causation.

1. *Its Position*, on the right side of the pelvis, on a level with and including the right ischial spine. On passing the finger into the opening the spine can readily be felt.

2. *Its Extent and Direction.*—In the recorded cases the sinus was from one to three inches in length, and its direction in three downwards and backwards, and in one upwards.

3. *Its Causation.*—The head descends slowly, slightly extended in the left oblique diameter, until it reaches the floor of the pelvis. Here the elastic, resilient posterior wall of the pelvis, aided by the

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[1] *Transactions of Edinburgh Obstetrical Society*, vol. iii. p. 361.

[2] *A Manual of Midwifery*, p. 305.

forward and downward inclination of the ischium, attempt to throw the head forwards. If the pelvis be normal, and the head of average size, this is actually what takes place in the vast majority of occipito-posterior positions. If, however, the ischial planes are nearly parallel, that is, if the normal slope is diminished, and if the ischial spines be prominent, as in the masculine or deep pelvis, then the advantage and cause of cavity rotation are lost. The head descends in the oblique diameter, the usual forward rotation is attempted, but the head becomes jammed over the ischial spine. The head, somewhat extended, becomes fixed, and the pressure so caused results in a slough which involves the right ischial spine. This mechanism somewhat resembles that met with in a rickety pelvis. If rickety mechanism consists in transverse descent and extension of the head, then to a certain modified extent that is what we meet with here; the depth and extent of the slough and sinus bearing a distinct reference to the length of time the head has remained fixed. It is clear, however, that but a short delay of the head in this particular position will cause a vaginal sinus of very considerable dimensions. This is well brought out in Case II., where, in a primipara in whom the second stage was scarcely three hours, a sinus of two inches in length resulted. Now, these sinuses in this particular position are deeper and more marked than one would expect from the narrowness of the pelvis and the length of the pressure. This admits of explanation in the fact that the sharp prominence of the ischial spines afford a point upon which the great bulk of the expulsive force can be readily expended. It can hardly be matter for doubt that the majority, if not all of the cases of persistent occipito-posterior occur in more or less deformed pelves. The mere fact of their repeated recurrence in the same patient is of itself a strong proof of this. The invariable occurrence of the lesion over the right ischium is a point to be noted. In looking for an explanation of this several points are to be noted:—

1. Right occipito-posterior positions are more common than left.

2. The occiput bearing on the right ischial spine excites a greater pressure than the sinciput bearing on the left.

1*st*, Because the occiput is *at first* more prominent than the sinciput. I say at first, because—thanks to the valuable observation of Dr Hart[1]—the compression which the head undergoes in this position is such that the head is pressed on in its antero-posterior diameter, and thus the asymmetrical wedge shape of the head is obliterated, so that at the point of contact with the pelvis neither end of the head has an advantage over the other, both being equally steep.

2*d*, Because the pressure of the posterior pelvic wall will act more on the occiput than the sinciput, thus tending to drive the occiput forward.

3*d*, Because the occipital arm is the shorter of the cephalic lever, and the pressure bears more directly on the force resisting it than on the force resisting the longer arm. Although, in this Society, the lever theory, as accounting for flexion of the fœtal head, has been ably combated by Professor Simpson,[1] yet the lesion we have described would seem to negative the condition assumed by Lahs[2] in his conception of the mutual relations of the girdle of contact and the fœtal head.

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[1] *Transactions of Edinburgh Obstetrical Society*, vol. v. part 2, p. 131.

Results.—It must be admitted that in none of the cases I have recorded were the results to the patient serious, so far as the ultimate issue was concerned. It is none the less true that such lesions may easily become of grave import.

1. In two cases the patient suffered from retention of urine, requiring the use of the catheter. This was no doubt due to the vaginal wound, in the same way that retention is observed resulting from perinæal tears.
2. The constitutional disturbance was small, and pelvic pain not in any way marked—so much so that, on that account, such injuries are very apt to be overlooked. This is what might be expected in a localized parametritis.
3. Such lesions greatly increase the risks of septicæmia.
4. They may be the starting-point of serious and long-continued parametritis.

Two further points require notice:—

1. Did the forceps cause the injury? I think not. The history of Case IV., at all events, conclusively proves that such an injury may occur without any instrumental interference; on the contrary, I believe—
2. That the prevention of the injury is to be looked for in the early application of the forceps. If my explanation of the occurrence of this lesion is correct, then it is clearly bad practice to delay applying forceps to a partially rotated occipito-posterior head.

Why are these sinuses not recognised? *a.* Although, after a forceps case, every careful practitioner will examine the vagina, yet he will probably fail to detect the lesion, as the opening, if there is one at all, will be very small, the injury being the result of pressure, and the slough not separating for some days. *b.* Because such injuries cause but little pelvic disturbance, and the attention of the accoucheur is not attracted to the pelvis, and no vaginal examination being made, the injury remains unobserved.

To sum up—

1. A partially rotated occipito-posterior position is the least common of the various forms of occipito-posterior position.
2. Such an occipito-posterior position is usually associated with a degree of minor disproportion of the pelvis.
3. A very frequent if not invariable result is the formation of a more or less deep vaginal sinus.
4. The situation of this sinus is over the right ischial spine.

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[1] *Transactions of Edinburgh Obstetrical Society*, vol. v. p. 75.

[2] *Die Theorie der Geburt*, Bonn, 1877.

5. The extent and depth of the sinus depends on the length of time that the pressure has been exerted; though a very short period of pressure is sufficient to cause a sinus.
6. These sinuses do not cause very much constitutional disturbance, and their existence is often overlooked because no vaginal examination is made.
7. The prevention of such injuries is to be found in an early use of the forceps.

ARTICLE V.—*On some of the Phenomena of Parturition in their Practical Aspects.* By DAVID BERRY HART, M.D., F.R.C.P.E., Assistant to the Professor of Midwifery, University of Edinburgh.

(*Read before the Edinburgh Obstetrical Society, 27th April* 1881.)

IN a previous communication to this Society, on the "Nature of Prolapsus Uteri," I remarked that "in the formation of the female pelvic floor a structural problem had to be solved as follows:—The floor had to be constructed so that we should have some method by which it could be opened-up to admit of the passage of the child's head; and while this was to be arranged in such a way as not unduly to impede parturition, the pelvic floor was not to be impaired in its structural efficiency, and was to remain sufficiently firm to resist ordinary, and to a certain extent extraordinary, intra-abdominal pressure." I endeavoured on that occasion to show how this had been effected *quâ* intra-abdominal pressure and its bearings on prolapsus uteri. To-night I wish to work out the problem already given, *quâ* parturition. This may be stated as follows:—At the end of pregnancy the fœtal head lies in the lower uterine segment and resting on the unbroken, compact pelvic floor. The vagina appears as a mere cleft, with the bladder, a pelvic organ, lying in front. Now, how is the bladder got out of the way of the advancing head? How is the urine stored and evacuated when the head fills the pelvis? How is the placenta got rid of? and, finally, Is there any arrangement for preventing the access of germ-laden air to the raw surfaces of the uterus, cervix, vagina, etc.?

Behaviour of Bladder during Parturition.—The facts as to the behaviour of the bladder need not occupy long. It is drawn up by uterine action, so that it comes to lie above the pubis—a position favourable for the storage of urine. It lies between the cervix and abdominal wall, with its anterior and posterior walls in contact. From this position, therefore, it results that during a pain in the second stage it is subjected to upward tension and antero-posterior pressure, and thus emptied. Often it becomes distended, reaching up even to the navel—a condition I have noticed in ordinary labours when it lay too much to the one side of the mesial line, or where, from too early administration of chloroform, the abdominal muscles did not aid in the second stage and compress the bladder, as I have above indicated.

So far, then, as we have gone, we see that during parturition the bladder is placed where it can distend to a limited extent, and that there is an arrangement by which it can be emptied during labour apart from the volition of the patient.[1]

Expulsion of Placenta.—Coincident with the expulsion of the child the pubic segment of the pelvic floor drops accurately on the sacral one, and the uterus, much diminished in bulk, but still large and containing the placenta, lies anteverted on the pubic segment. In a short time uterine action sets in again. The pubic segment is probably slightly elevated, and the placenta squeezed edgeways into the vagina. At the same time there is a palpable diminution of the bulk of the uterus. So far the mechanism of expulsion is that so accurately described by Matthews Duncan. Uterine action may, however, expel the placenta out of the vagina too, but not as a rule.

The causation of the expulsion of the placenta from the vagina is different from that of its expulsion from the uterus. Let us consider now how matters are. The placenta is wholly in the vagina and cervix. It lies, therefore, between the pubic and sacral segments, *i.e.*, it has the pubic segment, uterus, and abdominal viscera lying above it. Its presence in the vagina causes a strain reflexly on the part of the patient, and accordingly by intra-abdominal pressure it is expelled from the vagina, while from the uterus it has been extruded by uterine contraction. It is held by some that the elasticity of the vagina itself causes or helps the expulsion of the placenta therefrom. The vagina, however, has been so distended by the head that it is improbable that the much less bulky placenta calls any elasticity into play; and, besides, it would require to be a peristaltic elasticity to be of any avail.

So much for some of the phenomena. We now take up—

Parturition viewed from the Standpoint of Prevention of Accession of Air.—I wish to glance at parturition viewed from the standpoint of the prevention of the access of air. Modern surgery allows air-contact with a wound only after it has been purified by carbolic spray, or, in suitable cases, prevents the access of air altogether. What, then, are the facts in regard to the access of air to the vagina and cervix of the unimpregnated, pregnant, and parturient female? In the unimpregnated or pregnant female there is never any air in the vagina (unless in exceptional cases) whatever posture, natural or otherwise, she may assume. The vagina has always its walls in contact in all natural circumstances. But what about parturition? The pubic segment is, during labour, separated from the sacral one, and air has access, probably, when the labour is in the second stage. After the child, however,

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[1] A series of interesting observations could be made in a maternity on these points.

s expelled from the uterus its walls are in contact, with the placenta only between them; and as the breech is driven out of the vagina the pubic segment follows it up, and when expelled, the vaginal walls are once more in contact. The same happens after the expulsion of the placenta; and ultimately the downpour of the lochia acts as an irrigant of no insignificant value. In parturition, therefore, access of air is limited during birth, and absolutely prevented while the child and placenta are being expelled. The whole process is quite analogous, in this light, to the valvular method of opening abscesses, so as to limit the access of air, first practised by Abernethy.

So far I have considered certain facts in parturition. The question may, accordingly, be fairly asked, What practical bearings have these statements? And, first, in regard to the general management of parturition. The surgeon, in all his operative interference, keeps in mind as his type the simple fracture. The obstetrician, in all the ordinary manipulations necessary in a normal confinement, should keep the prevention of the access of air ever before him. Let me briefly sketch, then, what would be my ideal of a labour conducted intelligently and in accordance with natural facts. The parturient woman is in a private room, with pure air and perfect drainage. Abdominal palpation tells the practitioner that the fœtus is lying with its head engaging in the brim. Auscultation shows that the fœtal heart is vigorous and regular. As the pains go on he can feel the uterus diminishing the vertical height of its fundus above the pubes, until it ultimately expels a living child. He feels the uterus remain firm, and then, in about twenty minutes, notes its hardening and diminution in bulk simultaneous with the expulsion of the placenta.

Now this ideal is unattainable in one respect, viz., that vaginal examination is necessary. How is the accoucheur to render his vaginal examination as little dangerous to the patient as possible? In two ways. First, by seeing that his fingers are scrupulously cleaned with turpentine and carbolic acid; and, second, by taking care that his patient, while he examines, is never in the semi-prone nor genu-pectoral postures. These postures admit air when the vaginal orifice is dilated, and therefore are bad for ordinary obstetrical manipulation. This should be conducted when the patient is dorsal or semi-dorsal, with the shoulders raised. The fingers, passed while the patient is in this posture, separate the vaginal walls only where they touch them, and being followed up by them as withdrawn, air is prevented ingress.

Management of the Third Stage.—The mechanism of the expulsion of the placenta as given by Duncan clearly proves that traction on the cord to aid the expulsion is inadmissible under any circumstance. It is tempting and seems natural to help out a sluggish placenta with a gentle tug, but wrong nevertheless. The best means of imitating the natural process, when necessary, seems to me as follows:—After the child is born, the accoucheur shou palpate the uterus, feel that it is contracted, note its bulk, a satisfy himself further that there is no bleeding from the cerv etc. Nothing active should be done for twenty minutes or so. If th placenta is not then expelled, the following plan should be tried:—With the patient on her back, grasp the fundus uteri with bo hands, fingers in front and thumbs behind. Squeeze it firmly in the direction of the line joining these, avoiding downward pressur The uterus will then become smaller as the placenta is squeez out of it. It is now out of the uterus, as is felt by its lessene bulk. Then press down the uterus in the line of the axis of th brim. This drives the uterus against the pubic segment, and th latter against the placenta, forcing it out. Spiegelberg recommen the squeeze and downward push to be simultaneous, but I pref them separated. Sometimes the placenta is difficult to get out the vagina. This is owing to the curve of the posterior vagina wall arresting it. Under such circumstances some recommen traction on the cord. A better plan is, however, to pass in tw fingers into the vagina, hook back the lower part of the vagin wall so as to get rid of the corner, at the same time driving th uterus down. In this way the exact mechanism is imitated, and access of air prevented. When more interference with labour is required, all attention should be given to the details recommended by Dr Croom in his able article on antiseptic midwifery.

MATTHEWS DUNCAN: *Mechanism of Natural and Morbid Parturition*, p. 246. In this article Schultze's mechanism, as figured in his *Wandtafeln*, is criticised.

A. R. SIMPSON: *Contributions to Obstetrics and Gynecology*, p. 147, where a clear account of the Credé method of expelling the placenta is given.

MUNDÉ: *Obstetric Palpation.* Wm. Wood & Co., New York.

The newer literature by Schultze, Spiegelberg, Freund, and others, will be found in recent numbers of the *Edinburgh Medical Journal*, *New York Medical Journal*, and *American Journal of Obstetrics.*

ARTICLE VI.—*Large Calcareous Tumour, involving chiefly the Inner and Middle Portions of the Left Temporo-sphenoidal Lobe, and pressing upon the Left Crus and Optic Thalamus.* By T. W. M'DOWALL, M.D., Northumberland County Asylum.

CIRCUMSTANCES have combined to make the history of this case imperfect. The patient's mental condition prevented those minute inquiries into the special senses, etc., which add so much to the value of records such as this. I have, however, made every effort to make it as complete as possible.

Abstract from Case-Book.—E. G., admitted 8th May 1871, aged 1, single; said to be suffering from her first attack of insanity, the ause and duration of which were unknown. Epileptic, and danger-us to others. She was certified to be incoherent in conversation, nd violent in her language and conduct.

15*th May* 1871.—In a state of mania and fair bodily health. She is stated to be subject to epilepsy, but she has not had a fit since admission.

20*th June.*—Has had several epileptic attacks. Ordered bromide of potash.

22*d July.*—Considerably improved. Epileptic seizures rare, and very slight.

16*th April* 1872.—During twelve weeks ending 13th April 55 fits were recorded—22 during day, and 33 at night.

29*th December.*—During the last six months 217 fits were recorded—115 at night, and 102 by day—a considerably higher proportion than during the three previous months.

1*st May* 1873.—Ordered 15 grs. potass. bromid. three times daily.

1*st July.*—During the last six months 465 fits were recorded—133 by night, and 332 by day. The increased number by day is chiefly owing to very slight attacks being recorded that were formerly omitted. There is a decrease in the number of severe fits.

13*th October.*—She is almost daily subject to fits, and sometimes has several in a day. She is in weak bodily health, and unchanged mentally.

From 28th February 1874 to 25th May 1877 the notes only repeat that the patient was in a demented state and in fair bodily health, but epileptic.

14*th October* 1877.—Mentally her condition is quite unchanged. The fits, which occur as before, are peculiar in that they are, as a rule, very slight and transient—indeed, so slight that sometimes the patient does not lose her balance when sitting at table. Her urine always escapes during even the most transient attack.

8*th July* 1878.—Last night she had a great succession of severe fits; between 8 and 10 they were almost continuous. An enema stopped them at once. To-day she is quite lost, and unconscious of external impressions. She rolls about in bed, contorting her face. Such an attack of fits is very rare, if, indeed, it ever occurred before.

26*th February* 1879.—Last night, as she was going to bed, supported by a nurse on each side, she appeared to lose the power of her legs. There was no convulsion, but the loss of power was for the time complete. When seen in bed she appeared in her usual condition. Reflex action of legs was not abolished. During the night she was able to get out of bed without help. To-day she is going about in her usual way.

11*th March.*—She continued in her usual epileptic and paralyzed condition until this morning, when it was observed that her wasted arm, the right, was discoloured nearly to the elbow, and that the hand was in the first stage of gangrene, the cuticle peeling off if rubbed even lightly. No pulsation could be felt in the radial or brachial arteries. The limb was cold, and sensation appeared diminished, if not abolished. Her general condition is decidedly feeble. Ordered to bed, and to have such food as she can take. The limb to be wrapped in cotton wool.

14th March.—Her condition remained virtually unchanged till to-night. At 5.30 she began to take severe fits; had ten in succession, and died at 7.30.

Supplementary History.—All information relative to her condition before admission here is wanting, except that about twenty-three years ago she began to take fits. These gradually became worse, in spite of all sorts of medical and non-medical treatment. Her illness was attributed to emotion resulting from the death of her brother. At last she became so violent and troublesome that she could no longer be kept at home.

It would appear that, in the leading features, her condition underwent no marked change during her residence in the asylum. Her general bodily health and condition were rather feeble, but she never exhibited any symptom of phthisis, although, after death, the upper third of each lung was full of cavities and tubercular deposits in various stages of softening. During February last she decidedly deteriorated in bodily health, and lost 6 lbs. in weight.

Condition as to Paralysis.—Ever since admission she was paralyzed in the right arm and leg, which were also wasted. The following measurements were taken after death:—

	In.		In.
3 inches below coracoid process, right arm,	8³⁄₁₆;	left,	9¼
6 " " "	8¼;	"	8⅝
9 " " "	8¾;	"	8⅞
Bend of elbow, "	8½;	"	8½
1 inch below bend of elbow, "	8½;	"	8⅝
3 " " "	7⅜;	"	8
6 " " "	6⅛;	"	6¾
Wrist-joint, "	5⅞;	"	6¼
8 in. below ant. sup. spin. process, right leg,	16½;	"	17¾
11 " " "	15¾;	"	16¾
14 " " "	14⅜;	"	15⅜
Through centre of patella, "	12⅞;	"	13¾
4 in. below " "	11½;	"	11⅝
7 " " "	11½;	"	11⅝
10 " " "	10;	"	10
13½ " " "	8⅜;	"	8⅝

The paralysis and wasting were most marked in the arm. She was always very feeble on her legs, but was able to move about slowly in a peculiar way. The body was always inclined forwards. When she wished to advance the right leg, she rocked her body to the left side, then swung it forwards, sometimes even helping the limb by dragging at her petticoat. During the last year it was observed that the right hand was becoming more withered and useless, but the leg seemed to remain unchanged. She often fed herself with her left hand, especially during the last year, but even it was rather feeble and awkward. She held a spoon awkwardly, and could not hold a small object like a needle. As she was a patient who could give no rational account of her condition, her power of sensation, etc., could only be guessed at. Whether ordinary sensation was affected or not cannot be stated. She was certainly sensitive to pain, as was often evidenced by her complaining of the bunions on her feet. She knew the difference between articles of food. Some months before her death she nearly choked on a lump of meat; it was therefore necessary that she should be fed with mince. This was a frequent cause of complaint, she believing that her neighbours got better food than she. Speech was indistinct. Its character is difficult of description. It was not thick and muffled, but was rather such as is heard in imbeciles whose speech is imperfect. Her sight was imperfect, but in what respect I cannot say. She often complained that she could not see properly, and begged to be allowed to go home, that her brother might cure her; but no further information could be obtained by the most persistent questioning, and ophthalmoscopic examination was impossible. A nurse says that it was the left eye that was complained of, and especially after fits, but of that I cannot be certain. She never looked straight at one, but turned eyes to one side. There was distinct wasting of the left side of the face; the cheek dropped, and the mouth was drawn slightly to the right side.

Character of the Epileptic Attacks.—Almost without exception they were very slight. On a few rare occasions—two or three—she had a succession of severe fits, but even in these the tonic spasms were much better marked than the clonic. As a nurse said, "I never saw her work in fits like other patients." As a rule she had one to three slight fits every day. She might be sitting at table; her head would drop, she would clutch at the tablecloth with her left hand, a slight gurgle in her throat might be heard, and before the nurse could reach her she would have regained consciousness, the only traces of the attack being a wild, staring appearance of the eyes, marked lividity of the face, and the escape of urine. No convulsive movements were observed, except twitching of the eyelids of both sides and working of mouth to left side. When she recovered she generally was loquacious, repeating the few set phrases she knew about being sent away. If she happened to be walking when seized by a fit, she did not fall with the violence usually seen in epileptics. She slid gently to the ground, was quite unconscious, etc., and was able to walk off again in a minute or two. If near an article of furniture, she might be seized by a fit without falling; she grasped it with left hand, and that was sufficient to maintain her in the erect position. Occasionally she exclaimed "Oh! oh!" at the beginning of an attack.

The fits immediately preceding death were of a different description. In less than two hours she had ten. At first there was a distinct interval, but at last the attacks were almost continuous. The spasms were confined to the left side, but both eyes were affected, and turned upwards and to the left. The right arm, leg, and side of face were not affected in the least, but lay perfectly quiet. The face was distinctly twitched to the left side, and the right eye remained open.

Post-mortem Examination.—The condition of the lungs has already been noticed. Besides the description of the brain, it is only necessary to refer to the condition of the right axillary artery. It was occupied by a firm organized clot, completely blocking the vessel.

Brain.—In removing it, 2 to 3 ounces of serum escaped. There was marked venous and arterial injection of the membranes, and the sinuses were filled with dark clots. The convolutions of the superior surface were atrophied, but not markedly so. At a spot about the size of a threepenny piece, and about 1 inch to the inner side of the eminence produced by the superior semicircular canal, the left temporo-sphenoidal lobe was adherent to the tentorium cerebelli by means of the calcareous tumour, which here projected through the brain substance. The membrane stript with great facility.

The following drawing sufficiently shows the external relations of the tumour. The whole internal margin of the temporo-sphenoidal lobe was distorted by a hard calcareous mass, which was partially embedded there. The portion in black marks the area where the tumour was uncovered, and around this, where there is shading, it could be felt through the brain substance imbedded in the lobe. Its inner surface was in contact with the left crus and optic thalamus, pushing these structures towards the middle line. The drawing also shows how the iter and the left corpus albicans were altered in their relations.

The tumour was enucleated with ease. It was not surrounded by any softening; the white and gray matter in contact with it were (to the eye) quite normal. It was $1\frac{5}{8}$ in. in length, $1\frac{3}{8}$ in. in breadth, $1\frac{9}{16}$ in. in depth. It was irregularly lobulated, and at once suggested the idea that it was a cystic tumour of the choroid which had undergone calcareous degeneration. This was further strengthened by the manner in which the vessels of the choroid in the descending cornu entered it (see drawing 1). The anterior extremity pressed against the optic tract, completely

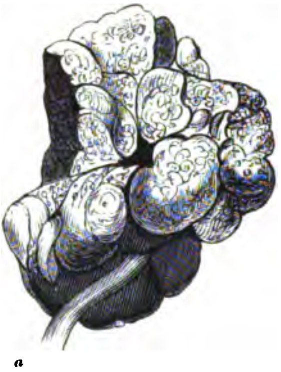

Fig. 1.—*a*, Vessels of Choroid Plexus—natural size.
Length, $1\frac{5}{8}$ in.   Breadth, $1\frac{3}{8}$ in.
Depth, $1\frac{6}{16}$ in.   Weight, 351 grains.

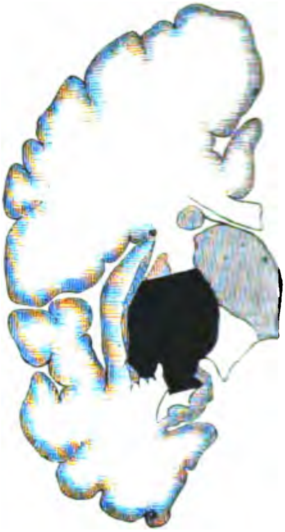

Fig. 3.—Section slightly anterior to Pitre's Par Section; also a little more sloping anter so that it shows the arrangement of struc usually seen in the Frontal Section.

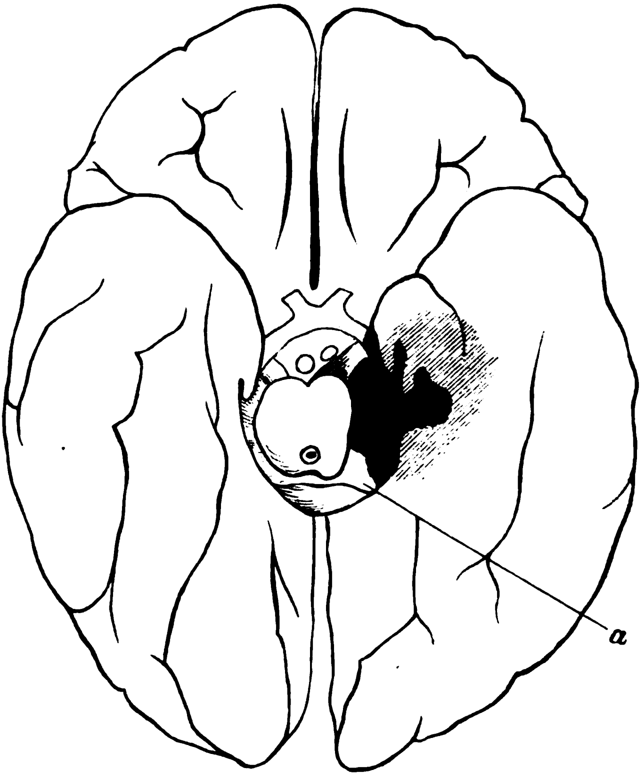

Fig. 2.—*a*. In this space the terminations of the Hippocampus Major and the Corpus Fimbriatu were visible. They were not compressed, but atrophied.

destroying it. A section carried through the ascending parietal convolution, and parallel to the fissure of Rolando, Pitre's "parietal section," grazed the anterior extremity of the tumour. Its anterior relations are shown in Fig. 3. It encroached upon the optic thalamus, internal capsule, lenticular nucleus, external capsule, and claustrum.

The internal surface of the lateral ventricle was roughened, and the lining membrane much thickened. The tumour occupied the middle part of the descending cornu, and completely destroyed the hippocampus major, etc., as they curved downwards, and what remained of these structures at each end was decidedly wasted. The anterior portion of the cornu was dilated, the cavity thus formed being subdivided into two smaller ones, each about the size of a small marble. They contained fluid, and slightly adhering to the wall of each was a small soft white body, the nature of which I have failed to discover.

Concerning the structure of the tumour itself there is little to add. It was surrounded by a distinct sheath of connective tissue, which dipped down between the lobes. Its density varied: in parts it was almost osseous in hardness; elsewhere it could be broken down by firm pressure. In one spot at the surface it contained two minute cavities containing fluid, and lined by a membrane.

Although this case does not illustrate any of the doctrines of localization, it is of interest in other respects.

ARTICLE VII.—*On a Case of Hydrochloric Acid Poisoning, and some Points in Practical Therapeutics.* By ARCHIBALD D. MACDONALD, M.B., C.M.

AT 4 A.M. on 20th January last I was called to see G. D., a master plumber, who was said to have mistaken some spirit of salt for drink of another kind. I found him in a state of collapse; but, partly on account of his being a powerful man, this was not deep. There was no corrosion of the mucous membrane of mouth or fauces, which was accounted for by his having gulped the acid. He had had about a teaspoonful and a half of bicarbonate of soda and a bottle of soda-water before my arrival; but as fully an ounce and a half of hydrochloric acid had been taken, I ordered a quantity of the common carbonate to be dissolved, preferring this form on account of the smaller amount of carbonic acid gas to be evolved in the stomach while the soda was combining with the acid. Testing a few drops of the bottle contents with my pocket-case caustic, I got the white precipitate of silver chloride. Then I gave a cupful of my solution, which was rejected with some coffee-ground-like matter. A second cupful was retained. The patient was then surrounded with hot-water bottles, and directed to have milk alone for nourishment. Subsequently the temperature rose to 102°; pulse 100 to 108. The epithelium of the tongue became leathery and ichthyosed in appearance, and this cleared off on the tenth day. There was complaint of pain opposite the cardiac and pyloric stomachic orifices, and general tenderness over the abdomen. On œsophageal auscultation a little halting of fluid was heard at the cardiac orifice. He now had opium for sleeplessness and as an anodyne, and turpentine stupes over the whole abdomen. A little diarrhœa of irritation set in, the stools smelling of turpentine. The inflammatory danger over, convalescence was uninterrupted save by a little cough, which succumbed to an ordinary mixture; and on February 9th, when I called, the patient had gone out to superintend some work.

On 9th April, and twice since then, I have seen him. He complained of slight nausea shortly after meals, and passing pains in the epigastrium, with a little feeling of halting of food before entering the stomach. The tongue was coated. He was somewhat nervous —a new sensation to him. A bismuth, acacia, morphia, and gentian mixture has almost entirely removed these symptoms. Otherwise he feels quite well.

Remarks.—The interesting points of this case seem to me to be the evidence it gives as to the low corrosive power of hydrochloric acid; the absence of mouth signs to aid the diagnosis, which might happen in a case where no information can be had as to the poison taken; the diarrhœa of irritation containing absorbed turpentine; and the apparent general result to the patient of only some gastric catarrh; evidence of œsophageal stricture or gastric ulcer being in the meantime wanting.

On an extended trial I find carbolic acid, in doses of one-fourth minim to a child of six mouths, one-half minim for a year, and one minim for two years and upwards, to be the best remedy for whooping-cough. The whoop goes; the vomiting ceases; the paroxysms are modified in intensity and frequency. This result I believe to arise from a similar action to that of creosote on the motor fibres of the vagus to the stomach, and from a lowering of the vitality of specific germ of whooping-cough disease. This points to the antiseptic treatment of the zymotic diseases generally.

Bromide of potash, preceded by a dose of calomel with sugar, I have found to be a most efficient remedy for the convulsions of children. Recently I gave ten grains in four hours to a child seven months old, which was convulsed every half-hour, with perfect result, and this has followed in all cases. Four or five grains every four hours has usually been sufficient, with, of course, the ordinary adjuncts of bath and linseed poultice along the spinal column.

Menthol I still find to give temporary relief in facial neuralgia, sciatica, and lumbago.

ARTICLE VIII.—*A Method of Treatment for Certain Kinds of Incontinence of Urine in Women.* By J. MILNE CHAPMAN, M.B., M.R.C.S., Assistant to the Physician for Diseases of Women, Royal Infirmary, Edinburgh.

(*Read before the Edinburgh Obstetrical Society, 23d March* 1881.)

THE class of cases I would refer to are not those where incontinence is complete, but where there is compulsory frequency of micturition, and where, on testing the bladder retaining capacity, it is found to be less than the normal. The following case, which was lately under treatment in the Royal Infirmary, will serve as an illustration:—

Mrs C., æt. 58, complained of frequent and painful micturition, which had lasted 3½ years. When she first took ill a doctor told her she had inflammation of the bladder and some urethral affection (caruncle ?), for both of which he treated her. On September 30th, 1880, it was found that she could only retain water half an hour. The pudenda were reddened, as was also the whole vagina. The urethra was somewhat gaping at its outlet. There was considerable pain evinced on rubbing the two walls of the bladder over one another or on introducing the sound into the viscus. The urine was turbid, acid, and contained pus cells, bladder epithelium, and some oxalates. The urethra was dilated by the finger, with the result of increasing the bladder's retaining limit to 1½ hours. At the same time nux vomica and uva ursi were given, and the vaginitis treated by sedative applications. The good effects of the dilatation disappeared in about three weeks, and it was then repeated, but soon she again relapsed into her former condition, minus, however, the pain and the presence of pus in the urine. The urethra was examined by the endoscope, and a slight redness was noticed. Iodoform bougies were used. The condition of the bladder wall, as seen by the endoscope, was normal, and now (Nov. 8th) her only trouble was that every hour, day and night, she had to empty her bladder. The total quantity of urine passed was 50 ounces, which gave little more that 2 ounces as the amount at each micturition. The sound passed into the bladder 3 inches from the external meatus, and it was found that it could only be pushed half an inch farther, and that thus pain was caused. It occurred to me that gradual forcible dilatation of the bladder might relieve the patient, and, with Dr Angus Macdonald's permission, I proceeded to submit this idea to trial. The bladder was distended with warm 2 per cent. carbolic solution, and the quantity used measured and found to be 4 ounces. Any attempt to inject more caused the most intense pain, and the resistance offered was great, as could be felt by the difficulty experienced in compressing the ball of the syringe. From this date the bladder was filled to distension daily, the injection being stopped when the patient's pain became great and when resistance reached a high point. The apparatus used was a Higgins syringe attached to an ordinary catheter, care being taken prevent the access of air to the bladder. Each day there was gradual increase in the amount injected of from a drachm to ounce. On two or three occasions the fluid as it returned w tinged with blood, but no harm ensued. On December 20th s was discharged in the following condition:—Instead of micturit every hour, she had only to get up once or twice during the nigh and by day she could retain water so well as not to be inconvenienced. Sixteen ounces could now be injected into the bladde and less pain was thereby caused than formerly when four ounce was the limit. The urine was normal in all respects. Two months later she reported herself as being still as well as when she le hospital.

It will be seen from this case that the woman had a cystitis with frequency of micturition, which latter remained after the forme was cured; that any indication there was for further treatmen was attended to either medicinally, topically, or by operation, bu that still the frequent micturition continued; that the bladde was then found smaller than normal, both by measurement with the sound and by the much more certain method of measuring its capacity, and that this capacity was increased fourfold by what may be called *slow operative dilatation of the bladder*, and that the results were in all respects satisfactory.

In presenting this case to the Society, I have purposely refrained from either theorizing on the subject or trying to draw conclusions, as neither would be justifiable from a single observation. But, as it happens, there has this week presented itself at the Infirmary a case of cystitis where the bladder capacity is three ounces, and we propose soon to begin dilatation as a remedial measure. In due time, when further observations have been made, I hope to be able to lay the results before the Society.

ARTICLE IX.—*Case of Traumatic Facial Paralysis.* By J. MACKENZIE BOOTH, M.A., M.B., C.M., Physician to the General Dispensary, Aberdeen.

As cases of traumatic facial paralysis are not of everyday occurrence, and their connexion with aural lesion may readily escape notice in the presence of the more prominent facial symptoms, I have deemed it expedient to record the following case, which lately came under my observation.

On the 3rd of March last I was asked to see a boy of seven years of age, who had met with a somewhat singular accident. Eleven days previously, while playing with his brother at hide and seek on a first-floor landing, he fell over the railing, lighting on his head on the lobby floor below. There he lay stunned and motionless. and remained so for a few minutes after having been put to bed, A small quantity of blood was seen to issue from the right ear, and when he recovered consciousness his friends noticed that the right side of his face was motionless and baggy. For four-and-twenty hours after he vomited everything he tasted; but then the vomiting stopped, and, save the facial defect, his friends noticed nothing abnormal.

When I first saw him on the eleventh day after, he presented a good picture of right-sided facial paralysis. From the paralysis of the R. occipito frontalis and corrugator supercilii, he cannot wrinkle or frown on that side of his forehead. The orbicular muscle being affected, he cannot shut his right eye, and the lower lid is depressed. The upper eyelid is drawn up by the levator palpebrarum, which is unaffected. The eye is full of tears, which constantly trickle down his cheek. The nose is flattened on the right, and its lumen narrowed. The cheek is flaccid from the implication of the buccinator. The mouth is pulled to the left, and when the patient laughs, he laughs on the left side of his face. When told to put out his tongue it is readily protruded in the median line. On inspection of the throat, the uvula is seen to be deflected to the left, and on phonation the soft palate is elevated towards the left side. On testing the taste-sensibility by alternately touching either side of the tongue with alum, the right side was decidedly inferior to the left. He also states that he does not taste his food so well on the right as on the left side, which, however, would partly happen from its not being so well broken up on that side from inability of the buccinator to push it between the teeth. On the right ear, a watch, normally heard at a distance of three feet, is only heard four inches off. On the left it is heard normally. Examination with the speculum shows the drumhead retracted, the manubrium foreshortened, and the short process prominent, while the long process of the incus and the incudo-stapedial articulation are plainly seen through the posterior quadrant of the membrane. In front of the manubrium a linear strip of blood-clot evidently indicates the site of the rupture, and in the meatus there are still lying a few small crusts of dried blood. The Eustachian tube is easily pervious to inflation, and there is no perforation-hiss audible with the otoscope, showing the drumhead to be now quite entire. There is no improvement in the hearing after inflation. On placing a vibrating tuning-fork on the vertex of the cranium, it is heard much better in the left ear. The patient is a stout, intelligent boy, and, barring the foregoing symptoms, is in good health. There is no history of deafness or discharge from the ear.

Treatment.—A blister was applied close to the ear, and the facial muscles were faradized daily for a fortnight. The blister was then repeated, and strychnia given in doses of 3 ♏ liq. strychniæ thrice daily. There was then no sign of improvement either in the hearing or in the facial palsy. When last seen, five weeks after the accident, there was a decided, though very slight, improvement in the latter—the attempts of the patient at shutting his eye, whistling, and pursing his mouth being more successful than before. The hearing remains *in statu quo*, both as regards aerial and bone conduction.

Remarks.—The case appears to me interesting from the probable site of the lesion. The impairment of taste-perception points to implication of the chorda tympani. From the paralysis of the levator palati and azygos uvulæ, the portio dura is probably injured above the junction of the Vidian nerve. The diminution of the sound-perception is almost certainly due to a lesion of the auditory nerve. The impaired bone-conduction on the affected side, as tested by the tuning-fork, points to this conclusion. That the conducting apparatus had little influence on the hearing in this case is probable from the fact, that after inflation (when the drumhead for the time had regained its normal curvature and the resulting intralabyrinthine tension been obviated) there was no perceptible change in the hearing for the watch, voice, or tuning-fork. By the use of the otoscope, too, and alternate compression of each tube while the tuning-fork was vibrating on the patient's head, there was no perceptible difference in the intensity of the sound on the two sides, showing by this method no deficiency in the conducting apparatus of the right ear. Besides which, in the few cases I have met with of uncomplicated rupture of the drumhead from concussion, such as a blow on the ear, etc., the hearing has recovered its normal intensity within a few days after the accident.

The foreshortening of the manubrium and retraction of the membrane are seemingly[1] due to paralysis of the stapedius (which derives its nerve from the portio dura), whereby its antagonistic muscle, the tensor tympani, supplied by the fifth, pulls in the manubrium and so produces retraction of the drumhead.

There was no discharge of serous fluid, and but a small quantity of blood lost after the accident. There is no tinnitus, vertigo, unsteadiness of gait, or other of the symptoms usually attributed to injury of the labyrinth. Apart from the primary concussion, there have been no symptoms of cerebral or meningeal mischief, which would have occurred had the lesion taken place at or above the entrance of the seventh and eighth nerves into the internal auditory meatus.

From these data, then, the lesion would properly be referred to that part of the canal where these two nerves lie together, and probably resulted from pressure on these structures by extravasation following the concussion.

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[1] *Cf.* Urbantschitsch, *Wiener Klinik*, Heft 8, 1879 ; *Einfluss der Facialislähmung auf die Gehörsperception*, p. 205.

ARTICLE X.—*On the Rate of Mortality in the Medical Department of the British Navy for the Ten Years ending in December* 1880. By THOMAS STRATTON, M.D. Edin.; *R.N.*, Devonport.

IN the *Edinburgh Medical and Surgical Journal* for January 1844 I gave an account of this for each year from 1817 to 1841. In the *Journal* for January 1853 I inserted a notice for the ten years ending in December 1851; in the number for March 1861, for the nine years ending in December 1860; in the number for March 1871, for ten years ending in December 1870. The particulars are taken from the quarterly *Navy List*.

Year.	Number of Medical Officers.	Deaths in the Year.	One Death in Officers.	Per-mille-age of Deaths, or one Death in the Thousand.	Number who resigned their Commissions.
1871	739	32	23	43	0
1872	727	16	45	22	4
1873	737	15	49	20	3
1874	721	19	37	26	12
1875	706	20	35	28	6
1876	689	23	29	35	3
1877	685	21	32	30	3
1878	701	24	27	19	0
1879	682	34	20	49	2
1880	653	26	25	39	3
Ten years	7040	230	30	32	36

The medical officers in each quarterly *Navy List* are added together and divided by four. Fractions are omitted. The numbers on the retired list and the active list are both given: in December 1880 there were 244 on the retired list and 397 on the active list.

On the 24th March 1878, H.M.S. *Eurydice* foundered off the Isle of Wight. There were 328 persons on board, of whom only two (seamen) were saved; the medical officers were Mr James L. Whitney and Robert Murdoch, M.B.

On the 31st January 1880, H.M.S. *Atalanta* left Bermuda for Portsmouth, and was not afterwards heard of. I think the number of persons on board was about 300; the medical officers were Edward L. Moss, M.D., and Lawrence W. Corcoran, M.D.

In Dr Farr's tables it may be seen that in England and Wales, in males over twenty-one, the mortality is one in thirty-eight, and twenty-six in the thousand. In the table now given the mortality is one in thirty, and thirty-two in the thousand; so that naval medical mortality is very much greater than the mortality in civil life.

The present communication is a brief contribution to comparative mortality; it may be of use with regard to life-assurance purposes, and may be interesting to those who have some idea entering the naval medical department.

ARTICLE XI.—*Indications and Counter-Indications of Davos (Switzerland), with some Statistics.* By Dr O. PETERS, Physician at Davos.

PRINCIPIIS OBSTA! Making use of an essay published by Dr A. Spengler in the *Bericht uber die Ratischen Bader und Curorte*, I take the liberty to bring the following medical notices on Davos. Since about fifteen years, Davos, a valley in the Grisons, 1556 m. above the sea-level, is known a sanitarium for people suffering from phthisis. In 1862 Dr Spengler gave an account of complete absence of pulmonary consumption at Davos, and urged, no place might be more suitable for treating chronic disease of the chest. Thus every year the number of patients coming in search of help against the complaint of the human society was increasing, and a great number returned home cured for ever. Now I hope it might not be quite superfluous to publish some hints for physicians, very much being written already by laymen on Davos, its inhabitants, geological, meteorological, and other circumstances.

The chief mistake often made by physicians in climatic treatment is to send the patients hither in a stage in which they might not be rescued from the jaws of death. Indeed, it would be cruel to recommend the high altitude of Switzerland a man suffering from high hectic fever, intense night-sweats, wasting, persistent and distressing cough, without any strength nor resistance against the exciting Alpine climate, or even complicated with organic disease. He had better stop at home and try the sunshine of the south coast.

I suppose, to-day no medical man shall hesitate to concede that pulmonary consumption is to be considered as a consequence of the impairment of the general health by several bad influences. Decidedly such a disease might be cured in the high altitude as quickly and surely as nowhere else. By the pure, fresh air exciting the respiration, the circulation of the blood and the nerves, by the low barometric pressure and the atmospheric rarefaction and the expansion of the lungs thereby caused, the weak, sick body soon is strengthened, the appetite increasing every day, the food being assimilated without any trouble, the sleep being corroborative, the original weight being regained by-and-by. In this way the local affection of the lungs gradually is diminishing, lastly cured, together with the improvement of the general health.

Dr Spengler, in the above-mentioned essay, appointed *seven* indications, well confirmed by experience.

1. Prophylactic residence.
2. Catarrhal phthisis.
3. Induration of the lung.
4. Chronic bronchial catarrh.
5. Remainders of pleurisy.
6. Nervous asthma.
7. General weakness.

1. Everybody with family or hereditary predisposition should settle in a high mountain climate for several years, until he is strengthened enough to undergo his due daily occupation without running the risk to die of phthisis. In these cases we obtain by far the best results. The same we do in those cases where a hæmorrhage suddenly occurs, the physician not being enabled to detect anything but perhaps at one little patch the auscultation sounds slightly diminished. These hæmorrhages usually arise in the bronchial mucous membrane by congestion of the blood and tenderness of the bloodvessels, and very often are the beginning of an acute and rapidly increasing phthisis. By those hæmorrhages *no* counter indication is given. On the contrary, they are very seldom repeating at Davos, and by a longer residence the patient will be saved from pulmonary consumption.

2. At the top of the lung even the slightest catarrh being manifest, by no means the physician should hesitate to send his patient into a high altitude. Here is one exception, however. The climate of Davos being very exciting indeed, a patient suffering from pulmonary catarrh together with an erethic constitution, *i.e.*, too irritable nerves, is to send hither *on no account*, for such a condition has been shown to grow worse very rapidly at Davos. Very soon an inflammation of the adenoid tissue is to be met with, at last softening is present, and death unavoidable (phthisis gallopans).

3. Consolidation of one or both lungs may be cured at Davos by absorption. But nevertheless the affected area of the lung usually appears for a long time not quite in order, yet because the bronchial mucous membrane is changed into fibroid tissue. The same we find in the lower parts of the lung; the epithelial elements after an acute pneumonia remaining behind unresolved often get absorbed in an uncommonly short time. But sometimes the improvement does not proceed in this way, several tubercles being intermixed, which may not be healed but by softening, of course only within a longer time. On that account patients with one lobe of the lung mixed with tubercles had better stop at home. If only the top of the lung is affected by consolidation, a climatic treatment still may be proved, as it is confirmed by experience that softening goes on at Davos very slowly, usually without any high fever nor other disagreeable occurrences. And this may also be the reason why we do not see at Davos as many hæmorrhages as elsewhere, the bloodvessels of a cavity being obliterated long before getting corroded by the matter of the melted tissue. Of course it would be very ridiculous to expect Davos or any place else in the world to be free of hæmorrhages. Hæmoptysis occurs at Davos as well as at Hastings or Madeira, sometimes even fatal, a larger bloodvessel being corroded, or a bloodless, weak

patient being attacked by frequent though little hæmorrhages. But these occurrences are by no means the result of the climate of Davos; nay, I hope to convince the reader by the following statistics that hæmorrhages do not occur at Davos as often as in the lower country. The chronic inflammation proceeding especially in the interlobular tissue, the case sinks into the ordinary chronic consumption, the common "phthisis," which may be healed by shrinking of the tissue (fibroid phthisis). It is in these cases that the patient is to be sent to Davos as soon as possible. If he regains his appetite and gets strengthened, we may prevent the softening of the indurated area. Should ever a larger part of the lung be affected, and shortness of breath be the result of the shrinking and the vicarious emphysema, Davos is to be avoided. Those patients had better go to the "South" to the Riviera, to Ajaccio, or to the Lac de Genève.

4. If the chronic catarrh of the pulmonary mucous membrane has attacked a large part of the lung, or existed a considerable time already, complicated with emphysema and dilatations of the bronchi it is no longer suitable for Davos. As regards the disease of the larynx, it is a mistake to consider the slightest affection of the mucous membrane or of the vocal chords including a counter-indication of Davos. Except the pharyngitis granulosa, very often treated at Davos, the most of the patients are suffering from hyperæmia of the larynx caused by the persistent cough and the matter passing through the glottis. But the improvement of the pulmonary disease increasing, this hyperæmia is diminishing by itself, as well as the common chronic catarrh of the larynx. But as soon as the submucous membrane is swelled, giving rise to shortness of breath, or if ulcerations or tubercles of the larynx are formed, Davos will be of no use.

5. A great number of pulmonary diseases are traceable to attacks of pleurisy, a certain amount of consolidation or thickening remaining behind, a source of local irritation, thus in time giving rise to the formation of tubercle. We may, however, prevent the tuberculization of the lung by the arresting power of mountain climate and the method practised at Davos. A patient suffering from empyema had better stop at home for to be operated, and should not come to Davos until the traces of his disease have nearly disappeared.

6. Asthma is to be cured at Davos if neither before nor after the attacks any catarrh or emphysema could be detected, *i.e.*, in cases of pure nervous asthma. Dr A. Spengler gives an account of several cases of nervous asthma all cured by the curative influence of Davos. Medicines never have been prescribed.

7. Now for the seventh indication. All people overworked at indoor pursuits or impaired by other unsanitary conditions, suffering from want of appetite, constipation, weakness, and hypochondria, attain the best results passing several months at Davos; but they must not be more than about sixty years of age, else they will become sleepless and lose their appetite, the mountain climate being too exciting for them.

General Treatment at Davos.—By this term I mean the way how the patients are to be treated in the high altitude. The open, pure air, warm milk, and the Italian wine of Valtelina, suffi- the cold douche, the regular change of walking and resting, by these things we are enabled to cure the cases included in the above-mentioned indications. As to the five douches existing at ciently good food (a principal thing), cold washings and rubbing, Davos, they are furnished most properly with a high pressure, and well-informed servants, and are applied by nobody but the physicians.

And now let us enter on the statistics, furnished by Dr Spengler. 323 patients are treated by him from June 1877 till January 1879.

Prophylactic cases,	...	...	19
Nervous asthma,	...	...	7
First Stage—			
a. Unilateral,	...	112	...
Right lung,	43	...	...
Left lung,	69	...	...
b. Both lungs,	...	19	...
Second Stage—	...	...	204
a. Unilateral,	...	158	...
Right lung,	106	...	...
Left lung,	52	...	...
b. Both lungs,	...	46	...
Third Stage—	...	...	50
a. Unilateral,	...	45	...
Right lung,	24	...	...
Left lung,	21	...	...
b. Both lungs,	...	5	...
			411

We have got 411 cases, because 88 of them, having both lungs affected, one in first, the other in second or third stage, are duplicates.

Cure,	73
Improvement,	190
Worse on account of too short a residence,	18
Worse on account of the disease being too much advanced or the climate not being suffered,	19
Died here,	11
Died at home,	14
Stationary,	17
	342

You see the number of 342, 19 patients being treated twice and mentioned twice.

The limited space will forbid my entering into detailed particulars of the statistics; beyond an outline sufficient to give some the leading features of the indications of Davos, I did not inte to elaborate. My essay must be looked on as a provisional, a not final. I only take the liberty to pass to an important questi viz., the *hæmorrhages at Davos.*

Out of those 323 patients treated by Dr Spengler, had hæmorrhages—

178 neither at home nor here;
126 at home, here never;
16 at home and here, *i.e.*, 5 per cent;
3 at home never, but here, *i.e.*, 1 per cent.

Summing up, we find well demonstrated that 304 patients—that is to say, 94 per cent.—never had any attack of hæmoptysis, and yet at 39 per cent. of them hæmorrhage formerly was present once or more. In 5 cases the hæmorrhage was fatal; 3 of them died instantly, patients in third stage, 1 already drawing to his end when arrived at Davos; the 2 others died of exhaustion and paralysis of the heart. The remainder very soon recovered from hæmoptysis, and left Davos, 2 cured, 8 improved, 4 worse.

I am of opinion these reports may be able to destroy all doubt concerning the hæmorrhages at Davos.

ARTICLE XII.—*Case of Coin in Air-Passages treated by Inversion of the Patient.* By JOSEPH BELL, F.R.C.S. Ed., Surgeon to the Royal Infirmary.

ON 10th May 1881 a waiter amused himself by throwing into the air a sixpenny-piece just received from a traveller. He intended to catch it in his mouth, but the coin disappeared. Fancying it had passed into his œsophagus, he came to the Infirmary, where he was seen by my house-surgeon, Mr Ross, who failed to find any evidence of its presence in either œsophagus or stomach, for the examination of the throat caused vomiting, and the coin was not found.

No laryngeal or pulmonary symptoms were present, though patient pointed to his left chest as being painful.

A laryngoscopic examination, however, satisfied Mr Ross and Dr Maxwell that the coin was lying edgeways in the left bronchus, just at the bifurcation.

There being no symptoms, he was left quiet, all preparations being made for tracheotomy if necessary, and Mr Ross slept in the side-room of the ward.

Next day I carefully examined chest and air-passages, with negative results; immediately after this, however, when I was in the act of operating on a sarcoma in the theatre, the patient was reported to be choking. Mr Ross found him in a paroxysm of coughing, and when it passed off he described a feeling of fluttering or flapping in his windpipe.

Dr Wyllie and I then made a most careful laryngoscopic examination, and though we saw the tracheal rings most clearly, no foreign body could be made out.

The history and the symptoms of the one attack were to my mind so convincing that the coin was in the air-passages, that, with the approval of my colleague, Mr Duncan, I at once prepared to perform tracheotomy in the event of the failure of inversion. So, having obtained the patient's leave, and all things being ready, he was held by the heels by two dressers standing on the operating-table, and a smart blow was struck on his back opposite the left bronchus, while he was instructed to keep his mouth open and to breathe freely. The sixpence at once fell into his mouth; a pretty smart cough coincided with its passing the glottis.

Cases of this kind are comparatively rare, and this one is an encouragement to attempt the inversion method. The surgeon must, however, be prepared to perform tracheotomy at once if the coin sticks in larynx and excites spasm, or lodges flatwise in upper part of trachea, and thus prevents ingress of air.

Part Second.

REVIEWS.

Dysmenorrhœa: its Pathology and Treatment. By Heywood Smith, M.A., M.D., Physician to the Hospital for Women and to the British Lying-in Hospital. London: J. & A. Churchill: 1881. Pp. 122.

In this work the author attempts to trace dysmenorrhœa to its various causes, and, taking up these in detail, treats the subject in the light of them.

In handling his theme thus he speaks of—(1.) Ovarian dysmenorrhœa; (2.) Tubal dysmenorrhœa; (3.) Of broad ligament; (4.) Uterine; (5.) From general causes; (6.) Vicarious. The author directs his attention chiefly and naturally to the first and fourth heads, touching only very lightly on the other three. The book is forcibly written, but can hardly be said to add much to our knowledge of the subject. The treatment recommended, except that too great leaning is exhibited towards mechanical interference throughout the essay, does not appear to us to be objectionable as a rule. Some of the positions maintained, however, indicate, to our mind, more boldness than prudence. At page 7 the author commences a series of observations regarding which he anticipates hostile criticism, and which, we frankly confess, in our opinion, deserves reprobation.

The meaning of the author's argument, so far as we can make it out,—and we allow it is no easy matter to understand him in th place,—appears to us to be that the sexual organs and instincts so overpoweringly predominate in the woman, that unless a woman have sexual intercourse she is nearly certain to have ultimately disease of the sexual organs. This is a conclusion so shocking that we can hardly believe Dr Heywood Smith intends it, though how otherwise to construe his meaning we have failed to find out.

In passing we must be allowed to remark, that we do not agree with the author in the view he expresses in regard to women, when he says that "the sexual sensations and functions constitute that for which they (the organs), and indeed the whole woman are formed." Such an idea of women may suit the conception of an oriental despot, but surely does not adapt itself to the beliefs or feelings of European society. There are surely many outlets and avenues for the pent up nervous energy of our women than the exercise or gratification of the sexual functions.

After this extravagant view of the preponderating influence of the sexual functions and organs in women, we feel no surprise though the mutilating operation of clitoridectomy is insisted upon as a valuable cure for certain forms of ovarian neuralgia. Battey's operation, of course, is strongly recommended, and the cases suited to it are carefully though briefly pointed out. Ought not those energetic gynecological surgeons to endeavour to extend the benefits of their knowledge to the other sex, and recommend the free amputation of the penis and the testicles? For many reasons, although not, of course, to cure dysmenorrhœa, such operations could be recommended.

The author reports an extraordinary operation for retroflexion of the uterus, in which he cut the utero-sacral ligaments. This operation the author claims to have been the first to perform. A contemporary reviewer, with whom we entirely agree, hopes he may be the last. Apart from the obvious danger of absorption of putrid materials from such a procedure, and the possibility of wounding the peritoneum, what advantage could lengthening the utero-sacral ligaments effect on a retroflexion? It could benefit an anteflexion or an anteversion, but it could only do harm in a retroflexion or a retroversion. We think, before Dr Heywood Smith proceeds to this operation a second time, he ought to study the causation of the ailment he is attempting to cure. There are many other points in regard to pessaries and operative interference to which we take exception, and we also desiderate more attention to general causes as productive of dysmenorrhœa than Dr Heywood Smith has seen fit to give. But we must take leave of the volume. We scarcely think the work is of a character to improve practice in this troublesome affection, or to greatly enhance the reputation of its author.

The Student's Guide to the Diseases of Women. By ALFRED GALABIN, M.A., M.D., F.R.C.P., Assistant Obstetric Physician and Joint-Lecturer on Obstetric Medicine to Guy's Hospital, etc. Second Edition. London: J. & A. Churchill: 1881.

THE appearance of a second edition of this manual within less than two years is sufficient evidence that it has supplied a felt want.

The book is written with the fulness, force, and clearness which characterize every literary production of its author. We are glad to observe that Dr Galabin, in this edition, modifies considerably the position he took in regard to uterine displacements in the first edition, and which we consider largely detracted from its value as a students' manual. We could wish that even in this edition there were less of the mechanical treatment of uterine displacements given; for while mechanical treatment may not be injurious in the hands of skilled specialists, we greatly dread the results of routine treatment of that nature by persons unable to gauge exactly the necessity for or results of such treatment. We are glad to notice that Dr Galabin has discarded the use of an intrauterine pessary in the treatment of retroversion of the uterus. To our thinking, however, much of what is said under the headings of anteversion and anteflexion would have been better left out.

Still, though there are these and other parts in the book to which we object, the work as a whole is well fitted to meet the object aimed at by its author, is ably written, and altogether well worthy of the success it has attained.

Handbook of Midwifery for Midwives. Translated by J. E. BURTON, L.R.C.P. Lond., from the Official Handbook of Midwifery for Prussian Midwives. London: J. & A. Churchill: 1880.

THE original of this book is the production of the learned and justly celebrated Professor Litzmann of Kiel, to whom, in conjunction with a commission of experts, the Prussian government delegated the task to compile the work. The mere name of the author is in itself sufficient guarantee of the excellency of the work. It contains naturally more instruction than it is possible to communicate to midwives in this country in the short course of three months they usually devote to their training, especially when we consider the extremely imperfect general education the majority of our midwives possess. But a work of this kind will do much to stimulate a desire for more knowledge on the part of the more intelligent of the candidates for the responsible position of midwife, and we hope it may help to pave the way towards a better education to the entire class, and thus forward the much-needed legislative action in this direction.

The handbook is much superior to any other works of the k we know of in the English language, and we congratulate M Burton on the service he has done for midwifery in translating it, and wish for the book a large circulation in its English dress.

A Directory for the Dissection of the Human Body. By JOHN CLELAND, M.D., F.R.S., Professor of Anatomy in the University of Glasgow. Second Edition. London: Smith, Elder, & Co.: 1881.

THE object of this book is theoretically admirable, although we fear that it will hardly bear the practical test. It is a small manual of about 200 pages, containing directions for the dissection of the various regions of the human body, and just sufficient description to enable the student to name the parts exposed. All other details, such as relations, attachments of muscles, nerve-supply, etc., etc., are to be acquired by the student's own unaided personal observation. It is true that larger books are to be allowed, but only at home, and this little manual alone is to be admitted upon the dissecting-table. The object in view is to counteract "the too common error of looking on dissections as mere illustrations for the statements of the text-books." That this is the way of obtaining a thoroughly reliable knowledge of anatomy no one will deny; but it will be hard to convince the student of this when confronted by an approaching examination. It is one of the evils arising out of the far too severe examination system of the present day, that a method of acquiring a knowledge of anatomy which would be of far greater benefit to the student in after years must be abandoned, or adopted with fear and trembling as to the effect it may have upon his chances of passing.

The order of dissection recommended in this little book is essentially the same as that carried out in the Edinburgh school. There are, it is true, a few trifling differences. Thus it is the dissector of the upper limb, and not the dissector of the head and neck, who is expected to dissect the muscles of the back and the spinal cord. Again, the student is directed to dissect the female perineum along with the pelvis, whereas they are studied at different times in the Edinburgh rooms. This change is a decided improvement. We have no doubt it will prove an acceptable and valuable text-book to many Edinburgh students.

The style in which it is written is exceedingly clear and pleasing, and is quite in keeping with the high character obtained by the other works which have emanated from the same distinguished author. There are very few alterations in this edition.

Anatomy of the Arteries of the Human Body, Descriptive and Surgical; with the Descriptive Anatomy of the Heart. By JOHN HATCH POWER, F.R.C.S.I. Third Edition. By WM. THOMSON, A.B., F.R.C.S. Dublin: Fannin & Co.: 1881.

THE two books upon the Arteries (viz., Harrison and Power) which have emanated from Dublin have long been well known and widely used both by teachers and students. We are glad, therefore, to welcome a third edition of the latter, more especially as it appears under the auspices of one so capable of doing it justice as Mr Thomson. In the present instance a considerable amount of matter has been omitted on account of its purely physiological character; the text has been rearranged, and some new material added, so as to bring the work up to the level of the present state of anatomical science. The various arteries are described with great care and accuracy, and the surgical details are very fully gone into.

We are surprised to observe that the editor has some dubiety as to the topography of the aortic arch. He finds that Quain describes it as first touching the vertebral column at the level of the *second* dorsal vertebra, and ending at the lower border of the *third* dorsal vertebra, whilst John Wood describes it as first reaching the spine at the level of the *fourth*, and ending at the inferior margin of the *fifth* dorsal vertebra. He is apparently lost between these two authorities, and considers it the safer course to quote both. But a question which involves a difference of no less than the depth of two vertebræ could surely have been settled to his own satisfaction by his own personal examination of the subject, or by a reference to Braune's beautiful plates of sections through the frozen body. In either case he would have seen that Quain's description is altogether erroneous, and that Wood's account of the aortic arch is as near as possible correct. It is now twelve years since Wood called attention to this mistake, which some way or other had crept into almost every anatomical book both at home and abroad, and still the error is perpetuated.

The work is profusely illustrated, but the woodcuts are coarse, and in many instances somewhat obscure.

Surgical Cases. By Dr NEWMAN, Stamford Infirmary. London: H. K. Lewis. 1881.

DR NEWMAN says that in a country hospital the surgeons enjoy the special advantage of frequently seeing their patients after they have left the hospital. This peculiarity of his experience enables Dr Newman to speak with unusual authority on some points. For instance, in regard to partial operations on the foot, he says, "The result has been, I think, invariably far from satisfactory; while, on the other hand, Syme's amputation at the ankle-joint has as constantly led to a firm, well-nourished, and enduringly useful stump" (p. 17).

In respect of operations for the removal of scirrhus of the mamma, Dr Newman does not give great encouragement. In favourable cases, he says, there is "subsidence of mental distress, relief to local suffering, and in some degree at least prolongation of life" (p. 113). He adds that five and half years is the longest period he has known of freedom from disease after operation. Operations for epithelioma of the lip are more successful. Though the disease has returned in some cases and had to be removed, yet the prolongation of life and relief from immediate distress have been more marked.

In regard to operations for stricture of the urethra, the general opinion is held by Dr Newman that, whatever method be adopted, the passing of an occasional bougie is necessary ever after if a relapse is to be prevented. Holt's method was mostly used at the Stamford Infirmary, and is highly thought of.

Several interesting cases of cicatricial contraction after severe burns are reported. The operations practised were mostly free incision (not excision), with antiseptic dressing and frequent movement of the joint affected. Dr Newman does not approve of the use of splints. He considers the antiseptic dressing an important element in the successful treatment.

Dr Newman concludes his most interesting notes and reports of cases by a reference to the treatment of nævi by electrolysis. He refers to the publications of Dr John Duncan, of this city, on the subject with commendation, to whom he is mainly indebted for guidance in his operations.

We cannot conclude without saying that we are always glad to receive such notes of cases which are carefully recorded, as a most valuable contribution to practical surgery. It is in this way that surgeons can best help one another with their experience.

The Orthopragms of the Spine. By R. HEATHER BIGG, Assoc. Inst. C.E. London: J. & A. Churchill: 1880.

MR BIGG, C.E., gives us in this work the mechanical aspect of the treatment of spinal curvature. His style is fresh, and even humorous, but, unfortunately, also wordy. The book, therefore, while interesting, is rather long for most professional readers. Its interest to the medical reader depends on its dealing with the subject from a purely mechanical point of view.

Mr Bigg does not define the meaning of the word with which he heads his book, but we gather from the context that an "orthopragm" is a kind of splint or support. These, as recommended, are the steel arrangements for which many of us have an abhorrence. The author's orthopragms, however, are made light and easy, and according to the scientific principles laid down by him.

He points out how it is only when badly made or when unsuitable to the case that they are cumbrous and uncomfortable; and we must admit that he makes out a good case for his steel spring and spiral supports, or orthopragms, in certain selected cases.

Our author frankly admits that there are certain circumstances where orthopragms are useless, and even injurious.

He attacks the Sayre plaster jacket, and not only condemns it, but says that "faith in the principle of the method was first shaken, then shattered, and ultimately lost altogether" (p. 109). In this we cannot agree. The plaster jacket and its follower the felt jacket are still in use, and will continue to be useful in certain cases, more especially among the poor and hospital patients.

We recommend this book to those who may have a difficult case of curvature to deal with, more especially if it be a lateral one with rotation.

The Transactions of the Edinburgh Obstetrical Society. Vol. V. Sessions 1877–78, 1878–79, 1879–80. Edinburgh: Oliver & Boyd: 1880.

As is explained in the preface, this volume is the first issued under an arrangement with the publishers of this Journal, and consists of reprints of all papers read before the Society which may have appeared in our pages, and abstracts of such as have not, with the reports which we have been able to lay month by month before our readers, lists of Fellows and office-bearers, etc., the whole forming a large, valuable, and very readable volume.

Many of the papers, such as those by Professor Simpson and most of Dr Hart's, have been collected and published separately by the authors, and have been already noticed in the Journal. Among the contributors are to be found all the teachers of Midwifery in the Edinburgh School; teachers in other schools, as Dr Matthews Duncan; Dr Paul Mundé of New York; Schroeder of Berlin and Simon of Heidelberg, translated by Dr Kirk Duncanson; Drs W. R. Reid and R. Bell of Glasgow; and many eminent practitioners in town and country, including the veteran Dr Hamilton of Falkirk. Dr Hamilton's paper on the use of the midwifery forceps was the means of eliciting several contributions on that subject from other Fellows of the Society, and was also the starting-point of a discussion which will well repay careful perusal. A new feature in this volume is the publication of quarterly reports by the physicians of the Royal Maternity Hospital. There are four such reports, embracing, therefore, a year's work in the hospital. The number of indoor deliveries is 208, and the deaths 8, or, as near as may be, 4 per cent. One of the deaths was from renal disease, the rest from septicæmia or puerperal fever. Of the cases delivered at their own homes by the same doctors, students, or nurses, there are 421, while the deaths were 4, or under 1 per cent. Of these, 3 were from hæmorrhage, 1 from peritonitis. The contrast afforded by these figures is suggestive, and scarcely warrants the thanks which we recently heard expressed at a public meeting in this city for the great saving of life effected by the hospital. Along with the statistical reports there are valuable clinical records of special cases, and their regular publication will certainly materially enhance the value of the Obstetrical Transactions.

In a paper on "Placenta Prævia, or Unavoidable Hæmorrhage," Dr Charles Bell treats exhaustively of this most interesting subject in its historical, theoretical, and clinical aspects; but he appears to us to treat rather cavalierly those latter-day obstetricians who do not admit those two terms as synonymous except at the end of pregnancy. A better criticism on the paper, however, could not be afforded than is presented in the discussion which followed its reading.

Dr Croom contributes several papers, all of which are marked by thoroughness of handling and by extensive knowledge and careful consideration of the works of those who have previously written on the same subjects.

The fruits of Dr Keiller's rich experience are scattered through the work, not only in his papers, which are few, but also in his remarks on the papers of others.

Dr Angus Macdonald's communications are numerous, and his remarks in discussion often so full and lengthy as to amount to really papers on the subjects in question. His own communications include "On the Risks and Treatment of Intrauterine Hydrocephalus;" "Puerperal Septicæmia;" "Treatment of Abortion;" "Three Cases of Parametritis, with Observations on its Diagnosis and Treatment,"—a paper which is destined to become classical from its valuable clinical observations and deductions,—besides numerous reports of cases. In his analysis of the cases under his charge in the Maternity, Dr Macdonald extracts the utmost from the necessarily small amount of material, and he deserves great praise for his courage in drawing attention to his fatal cases, and to the frequency of perineal tear. We cannot explain the statements of Dr Moir and other speakers who took part in the discussion, when they assert that this accident never occurs in their practice, except on the assumption that they never look for it.

Professor Simpson's papers and speeches will well repay careful reading, and one cannot but admire and take lesson from the clear and lucid way in which he always expresses himself, and the thorough knowledge of literature and detail that he brings to bear on the subjects under discussion. The same may be said of Dr

Hart, whose labours in the department of gynæcological anatomy are now attracting well-merited attention, and who is doing much to support the name that the Edinburgh School has always held for hard-headed original work.

We are sorry to see so little from Dr Underhill's pen in this volume, and to see his principal communication, "On Measles complicating Pregnancy," only in abstract, as we feel sure, from a study of his papers and his remarks, that he could greatly add to the value of the Transactions.

In conclusion, we have much pleasure in recommending this volume of the Edinburgh Obstetrical Transactions to our readers as containing a rich mine of interesting contributions to obstetrics and gynecology, and of valuable clinical cases and commentaries.

Twenty-Second Annual Report of the General Board of Commissioners in Lunacy for Scotland. Edinburgh: 1880.

THE prime value of these reports is the valuable statistical data which they contain. To those who study insanity, and to those who work out the study of pathology, the tables and figures of the Board of Lunacy are very precious materials for information and inference. The statistics of insanity are still somewhat immature, but each new number of the series strengthens and gives a broader basis to conclusions previously drawn.

The Commissioners state that, of the insane persons in Scotland of whom they had official cognisance during the year 1879, 1606 were maintained from private sources, 7957 by parochial rates, and 61 at the expense of the State.

The increase of registered lunatics, excluding 7 pauper inmates of training schools and 4 of the General Prison at Perth (who are certified lunatics), is 226. There was thus an increase of 27 private and 206 pauper patients. This increase is less than what has characterized the previous four years. The amount of money expended for the maintenance of 6344 pauper lunatics in asylums, lunatic wards of poorhouses, and private dwellings, amounted, in 1879, to £188,270, of which £8790 was contributed by relatives and others, and £71,270 was paid by the Government.

"During the whole period from 1858 to 1879, the total expenditure has increased 133 per cent., the expenditure for asylum treatment having increased 168 per cent., and that of boarding in private dwellings 30 per cent. The average cost per annum for each patient has increased in asylums and lunatic wards of poorhouses from about £20 to about £26; in private dwellings it has increased from about £8 to about £13; the average expenditure for establishments and private dwellings taken together, with all other costs, having increased from about £16 to about £24."

"The number of pauper patients discharged recovered," we are told in the report, "has increased from an average of 463 during 1860–64 to an average of 861 during 1875–79. This represents an increase of 86 per cent., which, being 10 per cent. more than the increase in the number of admissions, indicates that the new class of cases included in the larger number of admissions during recent years contains a larger proportion of ephemeral and curable insanity than the class represented by the admissions of the earlier period."

It may be true that some curable cases come into asylums which did not come before; but we suspect that this is outweighed by the number of chronic lunatics who would formerly have been permitted to go at large, but who are now sent to asylums "owing to the growing disinclination in the community to tolerate irregularities of conduct due to mental disorder," and by the larger proportion of dotard or paralytic old people who are shifted out of poorhouses into the district and pauper asylums, from which they are scarcely ever discharged recovered. Hence we are disposed to take the cheerful view that this increase in the number of discharges is really an indication of increased success in the treatment of insanity.

We are informed that there has been no material change in the rate of mortality amongst private patients during twenty years, but that there has been a slight decrease in the rate for pauper patients. "This must be due," the Commissioners surmise, "either to improved treatment, hygienic or otherwise, or to a larger proportion of the patients admitted during recent years having been the subjects of less fatal forms of disease than those admitted during the earlier period. It is not unlikely that both of these causes may have contributed to the result."

One likes to see some results which can be quoted for all this increased expense, this building and planting, and increased liberty allowed to patients, and attention to diet and clothing, cleanliness, and furnishing and judicious papering and painting; and when the figures exhibit a decided improvement in the number of recoveries and a slight improvement in the death-rate, we think that the Commissioners are much too modest in showing a willingness to put these favourable results down to causes over which they have no control. We make no objections that money should be spent and care bestowed on the alleviation of so frightful a misfortune as the loss of reason to our unhappy fellow-men; but it would not be prudent to forget that all these careful and costly appliances are also means to an end—the recovery of the patient,—and that the death-rate of a community is, on a scale sufficiently large, the most searching test of its sanitary condition. We have faith in medicine; we believe that a skilful, conscientious, hard-working medical man will, under similar circumstances, have a higher rate of recovery and a lower rate of mortality than the unskilful and the indifferent; and when we consider how completely the medical superintendents have their patients under their direction and control in all hygienic conditions, we are disposed to look narrowly into the results. One would like to know what stress the Commissioners lay upon the death-rate of asylums, and the amount of medical care and therapeutic skill expended upon the patients. Perhaps it would be too much to expect any reference to higher scientific work in connexion with the interesting problems of pathology for which asylums afford so rich a field for study, because we must bear in mind that superintendents are engaged to look after their patients, and not to make discoveries in medicine. As far as we can see, the Commissioners only note the deaths between their visits, which occur at irregular intervals. In some instances where the number of deaths has been high enough to invite attention, they praise the hygienic arrangements without any reservation. There may have been inquiries made and satisfactory explanations given, but these are not mentioned in the report. On the other hand, there are instances where establishments that have for years had a considerable death-rate are more favourably spoken of than others where the death-rate is exceptionally low, without this important distinction being noticed or commented upon.

The Commissioners remark, "The highest rate of mortality for the whole period has been in parochial asylums. This we have shown in previous reports to be probably due to the facts that the patients in these establishments are drawn almost exclusively from urban populations, in which a larger number of cases of acute and fatal disease of the nervous system occur than in rural populations, and that the inmates consist to a less degree of an accumulation of chronic cases than the inmates of most of the other establishments which contain pauper patients. The smaller death-rate in the lunatic wards of poorhouses is due to the inmates consisting of chronic cases." Assuming these general causes to have their influence, one may ask, Does the skill and care of the asylum superintendent ever appear as a factor worthy of notice? In one of the Commissioners' entries the favourable results of treatment, "in spite of the situational and structural defects" of the City of Glasgow Parochial Asylum, are ascribed "as partly due to the liberality of the parochial board, but chiefly due to the ability shown in the management by Dr Robertson and those associated with him." We believe this compliment to Dr Robertson is no more than he deserves, and we are sure that there are other instances where the care of the physicians has an effect upon the recoveries and the mortality which would disappear if they were replaced by superintendents of less decided skill and less ripe experience. We are also prepared to allow a share of credit to the Commissioners themselves for the attention they pay to hygiene, their useful suggestions, and the support they give to the superintendents in enforcing sanitary improvements upon dilatory or parsimonious boards of directors.

Take the case of Morningside, whose pauper population is mainly derived from urban districts; the mortality is lower than some counties' asylums whose inmates come from rural districts. In like manner, Woodilee Asylum, which draws its patients from the Barony parish of Glasgow, has a much lower mortality than the other parochial asylums, and even lower than several of the royal and district asylums. The percentage of the mortality in training schools for imbeciles has not been given in the report; but as the deaths and average number of residents are stated, it is easy to make this table as complete as the others. The mortality is, for Baldovan 11 per cent., and Larbert 3·7 per cent.

We have read over the entries made by the Visiting Commissioners in the patients' books of asylums and poorhouses, and compared them with the pages on "the present condition of the different establishments," which latter are simply a kind of *résumé* of the entries of the two Commissioners; but the Board of Lunacy are in possession of other materials which might add fulness and correctness to the description of the condition of the different asylums. These returns, such as the admissions, the discharges of the recovered and unrecovered, the mortality, the number of accidents and removals on probation, are certainly given in one form or another in the report; but in writing an account of each asylum severally it would probably be an improvement to place them all together. The Commissioners would thus have an opportunity of eliminating what was merely casual and superficial in their entries, and presenting a more complete and profound yearly history of the asylums.

The chapter on the difference in the statistics of pauper lunacy in the different counties shows great acuteness and power of handling figures. It is stated that the number of pauper lunatics in private dwellings has much diminished since 1858. In that year they constituted 38 per cent. of the total number, and in 1879 they constituted only 18 per cent.

The reports of the Deputy Commissioners who visit single patients are of interest. The following passage by Dr Fraser is so striking, especially as coming from one who was so energetic an asylum superintendent, that we cannot refrain from reproducing it:—"The general condition of the boarded-out pauper insane appears to me to be on the whole favourable. One who only knows the kind of accommodation provided for pauper lunatics in district asylums is apt to adopt erroneous views as to what is necessary for the accommodation of the insane. Of this I am now confident, that handsome and costly abodes are not necessary either for the well-being or happiness of the insane poor. The homes of the poor afford advantages which are not first sight apparent, and which are often not properly appre-

ciated. Family life, in spite of what may be regarded as discomforts and defects, is that which is desired by, and is best for, the bulk of single patients. Not one in five hundred of those of them who have been inmates of asylums would voluntarily return to the asylum, though many of them are not ungrateful for the kindness bestowed upon them while there. Every district has its own standard of cottage accommodation and comfort; and it is by this that the provision for the pauper lunatics of each district must be judged. If the lunatic's position is such as stands comparison with that of the average of his sane neighbours, it is reasonable to regard it as satisfactory."

On the whole, the report is well put together, and much of the information it contains will go to increase our general as well as our special knowledge in matters connected with lunacy.

Part Third.

MEETINGS OF SOCIETIES.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION LX.—MEETING VII.

Wednesday, 4th May 1881.—Professor SIMPSON, *Vice-President, in the Chair.*

I. *The Chairman* showed a PHOTOGRAPH of Madame Cavalini, the first woman on whom Porro performed his modified Cæsarean operation. The photograph had been given him by Professor Porro while he was in Milan last month. It showed two views of the patient, who is a deformed woman, and two views of the uterus which had been removed.

II. *Dr Cadell*, one of the secretaries, read a paper by Dr Andrew Davidson of Mauritius on ACUTE ANÆMIC DROPSY.

The Chairman said the criticism he had to offer was that it would have been of some interest had Dr Davidson added a note as to the medicines that had been found useful in modifying the progress of the disease, all the more as he spoke in some parts of his paper of the disease having been modified by the treatment adopted. This was a disease he knew nothing of, but he could not help thinking that probably the malarial influences under which most of the patients lived were not altogether so powerless as Dr Davidson seemed to wish to make out towards the close of his paper. He was interested in the question of sex most liable to the disease, as the same sex, the female, was most liable to anæmia in some of its worst forms, especially while in the puerperal state. There was also described a form of anæmia affecting women round about

Milan, which was thought to be due to the malarial climate, or at least influenced by it. For his own part, he felt indebted to Dr Davidson for sending to this Society such a communication on a disease that was so interesting from its very rarity.

Professor Grainger Stewart remarked that Dr Davidson was exceptionally fortunate in enjoying opportunities of studying remarkable epidemics. Some years ago he had communicated to this Society the best accounts we have of the recent outbreaks of the disease known in the Middle Ages as "dancing mania." The outbreak of that malady which Dr Davidson described was witnessed by him while he was acting as medical missionary in Madagascar, and its features corresponded very closely to those of the Middle Age outbreaks as described in Hecker's classical work. It was certainly worthy of notice that Dr Davidson should have met with another epidemic of so interesting a kind as that which had just been described. He felt that much interesting information had been conveyed in the communication, and he particularly valued the careful discrimination between this acute anæmic dropsy and beri-beri. With regard to the pathology of the disease, it appeared not unlikely that the process was due to a poison, that this poison acted primarily on the alimentary tract, and afterwards on the blood, and that the dropsy was a further result of the blood change. The observation of minute refracting particles abounding in the blood suggested the possibility of these being minute vegetable organisms. This view of the pathology was merely, of course, to be regarded as a suggestion, and not as founded upon a sufficient study of the disease. He felt that the Society was much indebted to Dr Davidson for his valuable contribution.

Dr Shand was disposed to remark on the difficulty that there was in deciding whether an epidemic was infectious or not. The writer of this paper seemed at first to have been in the same difficulty they were in Edinburgh in 1848, when the second epidemic of cholera visited the city. There was then a division of opinion in Edinburgh as to whether the cholera was infectious or not. During the first epidemic in 1832 the opinion was that it was not infectious; but since then many had changed their minds, particularly as all the nurses had succumbed; so that, when he was leaving Edinburgh, Syme tapped him on the shoulder and asked were he was going. "To see the cholera." Syme thereupon advised him not to go to a cholera hospital, but to be satisfied with hearing about it. He, however, went to the cholera hospital, where Mr James Balfour was one of the house physicians, and *he* was not much troubled with fears of infection, for they took their luncheon together very cosily in the ward among the patients. When he went to Paris, he took with him a letter of introduction from Sir Robert Christison to Louis. Louis handed it to his Interne (who had been a student of Guy's) to read. In it Christison said, "I see you are to have your cholera epidemic. We have had it here, but we have changed our minds since 1832: we now think it highly infectious." Louis shook his head at this, not believing in its infectious nature. As he went round the wards, he put his ear in contact with the patient's chest to listen without the stethoscope; and though Dr Shand mentally hesitated, yet he had to listen in the same way out of mere shame at seeming afraid. His own feeling regarding cholera was that the risk of infection, however subtle it might be, was not of the character of the infection of scarlet fever, small-pox, or the old typhus.

OBSTETRICAL SOCIETY OF EDINBURGH.

SESSION XL.—MEETING VI.

Wednesday, 23d February 1881.—Dr ANGUS MACDONALD, *President, in the Chair.*

I. *Dr James Young* showed a TWIN PLACENTA. The children were males, and presented head and breech. The first was a breech case, and weighed 6 lbs. He lived only twelve hours. The second child weighed only 4 lbs., and is thriving well.

II. *Dr Somerville* read his paper on TWO CASES OF PUERPERAL HÆMATOCELE, which will appear in a future number of this Journal.

Dr Bruce felt indebted to Dr Somerville for his interesting cases. He thought Dr Somerville deserved great credit for his diagnosis. He agreed with him in his treatment, and also in his remarks on the early use of the forceps in preventing much hæmorrhage.

Dr Hart had listened with great pleasure to Dr Somerville's paper. He did not understand how blood from the veins in the pampiniform plexus could find its way between the vaginal and rectal walls. It usually, in such a case, bled into the peritoneum.

The President had listened with interest to Dr Somerville's paper. The cases were uncommon, although, perhaps, they were more common than was recognised. They were difficult to differentiate from parametritis and perimetritis. Our knowledge of hæmatocele was only recent. It would certainly not have escaped recognition until Nelaton's time were it not for its being complicated with pelvic inflammation. He had only met with two extra-peritoneal and one retro-uterine intra-peritoneal puerperal hæmatoceles. He mistook the last for an abscess, and aspirated. He saw one extra-peritoneal at the Maternity. A week or two after delivery he could not understand how the pulse and temperature rose. On vaginal examination, a bulging, soft mass was felt on the left side of the vagina, which was opened and washed out. The patient recovered completely. Of course such treatment was only advisable when the effusion was extra-peritoneal.

Dr Somerville thanked the Society for their reception of his paper. The diagnosis was easy on local examination. He had no doubt the hæmorrhage was extra-peritoneal.

III. *Dr R. Bell* then read his paper on AN IMPROVED METHOD OF TREATING UTERINE DISPLACEMENTS, which will appear in a future number of this Journal.

Dr Hart said the use of the glycerine plug was first introduced by Dr Marion Sims of New York. It was now a very well known method of treatment in suitable cases. Thus, in congested ovaries, split cervix, and retroversions of the uterus, when the fundus was tender, it acted admirably by depleting and supporting the prolapsed or displaced organs just as a pessary does. Every Edinburgh student knew this. But in retroversion of the uterus where the tenderness had been subdued it of course gave way to the Albert Smith pessary. When properly fitted, this instrument could be left in for a month or two without being changed. Very often pregnancy occurred while it was being worn, and then, of course, a perfect cure was ultimately got. A glycerine plug had not the slightest effect in remedying the flexion of an anteflexed uterus, as Dr Bell asserted. It tilted the uterus as a whole back, but the relation of the fundus to the cervix was unaltered by it. The glycerine plug was exceedingly useful in the subacute inflammations almost always complicating displacement, but they gave way to vulcanite pessaries.

Dr James Young thought the addition of tannin as an astringent to the glycerine a good idea. He had long used the glycerine plug with advantage in cases of congestion of the ovaries or uterus, as well as in numerous cases of different flexions of that organ, and found it to act favourably by depletion, and prepare the uterus for the use of the Hodge pessary, if the case demanded such treatment.

Dr Bruce thought Dr R. Bell's remarks as to the evil effects of pessaries applied only to badly-fitting ones. When properly fitted they were of the greatest value.

The President was very glad to see Dr Bell present in the Society to-night, as it argued considerable interest in its work that he should have come so far to read a paper before it. He had also listened to the paper with much interest. But in saying so he must be held as distinctly guarding himself against being held as agreeing with a great part of what Dr Bell had advanced in his paper. Dr Bell had disclaimed, as well he might, all credit for originality so far as the use of plugs of cotton wool steeped in glycerine for the subjugation of pelvic congestion and inflammation was concerned. He was also afraid that further experience would show that Dr Bell had overrated the advantages to be gained from the treatment proposed, as well as the range of the cases to which it was applicable. At the same time, the combination of alum and carbolic acid with the glycerine, which was the most original part of the paper, was suggestive, and was certainly worth trial, though he would hardly expect to obtain such satisfactory results from it as Dr Bell had obtained. Very nearly the same combination was suggested by Atthill when he recommended the use of plugs of cotton wool applied to the cervix after they had been dipped in colloid styptic to which $\frac{1}{30}$ of its bulk of carbolic acid was added. Here you have the styptic effect of the tannin and the collodion with the antiseptic effect of the carbolic acid. Dr Bell had improved upon this idea by adding the glycerine. He could not understand how the proposed treatment could affect displacements in the manner asserted by Dr Bell. He rather thought Dr Bell's observations must chiefly refer to downward displacements, where the astringent effect of the alum was well known as giving relief by its action upon the vagina. He was not surprised though Dr Bell met with great success in his treatment of anteversion. He saw very few of these in practice, and believed far too much was made of them; indeed, he regarded an anteverted uterus which was replaceable as practically normal. But he must object to the statement made by Dr Bell that his astringent plugs, even when, as he said, aided by ergotin, caused absorption of a small fibroid in the anterior wall of the uterus. We possess no evidence that any appliance hitherto made can cause the absorption of such tumours. Careful observation of tumours treated by ergotin, such as those of Leopold, show that they are squeezed and starved by the prolonged use of ergotin, but not absorbed. He must also demur to Dr Bell's statements regarding the use of pessaries when he stated that they required to be constantly increased in size. That might be true if a pessary alone and unaided by operative or external support were employed to combat a prolapsus uteri; but for the treatment of retroversions it was well known that we were able to employ pessaries gradually decreasing in size. Besides, a well-fitting and well-adapted vaginal pessary did not, as Dr Bell stated, ever distend the passage until it was as large as the pelvic cavity.

Dr Bell replied. He had found his method of treatment very valuable.

Part Fourth.

PERISCOPE.

MONTHLY RETROSPECT OF OBSTETRICS AND GYNÆCOLOGY.

By Angus Macdonald, M.D.

On Curetting the Uterus, by Dr L. Prochownick, Hamburg (*Volkmann's Samm. Klin. Vorträge*, No. 197).—The author limits the operation to the following classes of cases:—1*st*, Those forms of puerperal endometritis which are the result of retention of part of the ovum; 2*d*, Ordinary chronic endometritis; 3*d*, Cases of new formations springing from the mucosa; 4*th*, Endometritis secondary to chronic metritis. In the first class of cases he advises the use the finger in preference to the curette where practicable, but relies the latter in early abortions. In the second class he says it is our duty—1*st*, to remove as thoroughly as possible the diseased mucous membrane; 2*d*, thereafter to insure the organ rest for a lengthened period of time, and to guard it against any irritation; and 3*d*, favour the formation of a new normal mucous membrane. To accomplish these indications in a case of any severity, recourse must be had to intrauterine treatment; and of the various forms of this, curetting is the only one that can be trusted to for accomplishing the first indication thoroughly, quickly, and with safety. In the third class of cases the value of curetting lies in the removal along with the new formations (such as mucous and placental polypi) of the adjoining mucosa, which is usually unhealthy. In the fourth class of cases the author would only class curetting as an auxiliary to other means. Contra-indications to the performance of the operation, the method of performing it, and the after-treatment, are then considered at length.

The Prevention of Syphilitic Infection from Vaccination, by M. B. Freund, Breslau, reported in *Centb. f. Gynäk.*, No. 7.—Among other points, the author insists on the fact, which he has seen proved by unintentional experiment, that the danger of lymph from a syphilitic child infecting depends upon the time that it is taken—that is, in a case he saw, lymph at the seventh day did no harm, while, taken from the same child on the ninth day, when it had become opaque, it conveyed syphilis. "What is lost in quantity is gained in safety."

Removal of a Kidney on account of Uretro-uterine Fistula, by B. Credé, Dresden (*Archiv f. Gynäk.*, Bd. xvii. Hft. 2).—The condition was the result of a parametric abscess following labour. There was constant flow of urine from the vagina, while at the same time urine was passed in the natural way, and no fluid could be forced out of the bladder into the vagina. The characters of the two fluids were somewhat different, and the quantity passed by the vagina was the greater by one-fifth. By means of a speculum the urine was seen to flow through the os uteri. After the cervix had been dilated by tents, there was discovered, by the use of an intrauterine speculum, a small depression in its upper part on the right side, through which the urine gained access to the uterus. Two lines of treatment presented themselves,—1*st*, formation of a vesico-vaginal fistula, with subsequent closure of the vagina, or extirpation of the right kidney. The latter was performed, and the patient recovered completely from the operation, and was cured of her disagreeable affection.

Successful Removal of a Forty-five Pound Cystic Fibroid the Uterus, by E. Schwarz (*Archiv f. Gynäk.*, Bd. xvii. Hft. 3).

—The writer records the history of a case in the clinique of Professor Olshausen of Halle, which had been diagnosed as one of ovarian disease necessitating ovariotomy. In the course of the operation its true nature was discovered, and, on account of the solidity of the great mass of the tumour, the abdominal incision had to be enlarged as much as practicable. When the tumour was turned out it was found to be attached by a broad base to the posterior wall of the uterus. This was surrounded by a piece of elastic tubing, which was stitched to the stump to retain it in position, and the tumour removed. The stump was secured by a long needle near to the lower angle of the abdominal wound. Twelve hours afterwards it was found that the needle had given way, and that the stump had fallen into the abdominal cavity, where it was allowed to remain. On the seventeenth day, by gentle traction on the ligature it came away, and with it the included portion of the stump, which was about the size of a boy's fist. From then the patient improved rapidly, her temperature hardly rising above the normal. The writer then considers the subject of the application of Esmarch's bandage in such cases, and describes a method for doing so, and a new method of dealing with the peritoneal wound in similar cases and in cases of extirpation of the uterus.

COMMUNICATION IN REGARD TO TREATMENT OF RUPTURE OF THE UTERUS, by Dr Felsenreich, Vienna (*Archiv f. Gynäk.*, Bd. xvii. Hft. 3).—The writer recapitulates shortly Frommel's cases, which have already been reported in this Journal, and then adds a case of his own where complete recovery followed treatment by drainage and injection of warm carbolic acid lotion, for both of which he gives directions. He also recommends binding up the external genitals with some such antiseptic as salicylic wool, which is to be changed frequently.

ON FORCEPS WITH TRACTION APPARATUS, AND THE AXIS-TRACTION FORCEPS, by Dr M. Sänger (*Archiv f. Gynäk.*, Bd. xvii. Hft. 3).—The subject of this lengthy and historical paper is "the forceps of Tarnier, their precursors and modifications, and the adaptability of the German forceps to their principle." The author comments upon Tarnier's failing to mention the many traction apparatuses which had been recommended before his time, and supplies a full account of the various means which have from time to time been employed for the application of traction force by other means than by the handles. He says that the majority of his countrymen are so contented with what are called the German forceps that they will be unwilling to adopt Tarnier's, the blades and handles differing so much as they do. He also objects to the French instrument on account of its complexity, holding that for general use a much simpler forceps is required. He describes and criticises Tarnier's forceps and Simpson's axis-traction forceps. He accepts Simpson's forceps as better than Tarnier's on account of the forceps part of the instrument being better, and says that Tarnier, even with his latest model, has not solved the problem—that the perineal curve and the shape of the blades are objectionable, and that the use of the old-fashioned French screw-lock is a step backwards which the Germans could not take; while, "not to mention its complexity, the instrument is very dear. It costs 80 francs." He then sets for himself the task of doing for Germany what Simpson has done for this country, applying a traction apparatus to the forceps in general use. He does not, however, merely add to the instrument the traction bars and handles from the Tarnier forceps, but recommends the use of two leather thongs, which are secured into the posterior angle of the fenestrum and brought through an indiarubber ring pessary which is passed over the handles and kept in position over the lock. Through loops in the ends of the thongs is passed a piece of stick, on which traction is made with one hand while with the other the handles are steadied. By these means the writer claims that he accomplishes the same end as is done by the traction apparatus of Tarnier's or Simpson's forceps, the same mechanical effect being obtained in a much simpler manner.

MONTHLY REPORT ON THE PROGRESS OF THERAPEUTICS.

By William Craig, M.D., F.R.S.E., Lecturer on Materia Medica, Edinburgh School of Medicine, etc., etc.

Iodoform.—Dr Petersen (*Petersb. Med. Woch.*, March 28) finds that the odour of iodoform can be completely masked by the addition of tincture of musk in the proportion of one drop to the ounce of iodoform, whether this be in the solid or fluid form.—*Pharmaceutical Journal*, 30th April 1881.

On the Treatment of Impetigo Larvalis by Powder of Iodoform.—Although iodoform has long been used with advantage in the treatment of ulcers of various kinds, more especially syphilitic ulcers, I am not aware that it has been employed in any other kind of chronic skin disease. The idea, however, happened to occur to me to employ it in impetigo larvalis—by which name I mean the mattery, yellow-scabbed patches which occur on the faces of children and young adults. I was led to this idea by noting that the raw surfaces concealed by the scabs of impetigo have, although they are not ulcers, certain points in common with that class of ulcers which iodoform is specially successful in healing, namely, that they present a soiled false-membrane-like surface, which discharges copiously a milky pus, and that this surface has to be succeeded by a florid, clean, raw-beef-like surface before healing. My experiments have been conducted by removing the scabs and drying the sores with rags, and then dusting them over with a mixture of iodoform (in very fine powder) and of starch powder in equal parts; and then, as the surface improves, I use iodoform powder undiluted. Very rapid improvement takes place under this treatment. The mere dusting over of the raw surfaces with the powder does not of itself suffice, since if that alone be done the surface speedily dries up again; that is to say, a thin, hard, dry scab is immediately formed, and this cracks, and so produces an uncomfortable tense condition of the surface which is not only extremely irksome to the patient, but also highly unfavourable to rapid healing. I accordingly, in my earlier experiments, coated the powdered over surface with a film of almond oil laid lightly on with a camel-hair brush; but this plan, which succeeds very well in the case of ulcers, does not agree equally well with the excoriations of impetigo. What I find to agree very much better than the oil is a film of glycerine, under which healing takes place much more rapidly. The conditions that have to be observed are these:—1. The scabs are to be softened by bathing them with warm soap-and-water, and then completely detached and removed, and thereupon the raw surface is to be gently dabbed dry. 2. The iodoform is to be in very fine powder, and freely dusted on. 3. A layer of glycerine is to be lightly laid over it. 4. The process should be repeated, if possible, every two hours by the patient himself, or, if a child, by its nurse. Under these conditions the disease, in many instances, within a day or two exhibits a very remarkable improvement, and speedily becomes healed. A moderate dilution of the iodoform with starch powder will render it quite a comfortable application in cases where it would otherwise cause irritation.—Balmanno Squire, M.B., *British Medical Journal*, 14th May 1881.

SULPHATE OF ATROPINE FOR THE RELIEF OF THE PAIN IN CANCER.—According to M. Auger (*Union Médicale*, 14th April), a lotion containing 1 part in 1000 of sulphate of atropine, applied by means of a compress wetted with the solution and covered with oiled silk or gutta-percha, gives considerable relief to the pain of cancer, without causing symptoms of absorption, such as dilatation of the pupil or dryness of the throat.—*Pharmaceutical Journal*, 30th April 1881.

OOLACHAN OIL AS A SUBSTITUTE FOR COD LIVER OIL.—Not long ago dugong oil was introduced into this country as a rival to cod liver oil, and now a new claimant has appeared under the name of "oolachan oil." At ordinary temperatures it appears to have a consistence between that of dugong and cod liver oils, and a taste that is perhaps slightly more agreeable than either. The oolachan fish is about the size of a herring, and is met with on the coasts of British Columbia and Vancouver's Island. It is so full of oil as to be known as the candle fish, for, when dried, it can be used as a torch.—*Pharmaceutical Journal*, 30th April 1881.

ANTAGONISM BETWEEN BELLADONNA AND PILOCARPINE.—Several cases of poisoning by belladonna liniment have recently occurred. In one of these, in which a wine-glassful (℥ij. ʒij.) had been swallowed, recovery took place on the administration of the physiological antidotes, pilocarpine and tincture of opium. Of the former one-fifth of a grain was subcutaneously injected every fifteen minutes until four-fifths of a grain had been used. It did not cause the least perspiration.—*Pharmaceutical Journal,* 30th April 1881.

PERISCOPE OF OTOLOGY.

By Dr Kirk Duncanson, Surgeon to the Ear Dispensary, 6 Cambridge Street; Assistant-Surgeon, Eye Infirmary; Lecturer on Diseases of the Ear, Edinburgh School of Medicine.

On Extracting Foreign Bodies from the Ear.—Mr M'Leod details a plan, in the columns of the *British Medical Journal* for July 1880, page 50, similar to that suggested by Dr Lœwenberg in the *Lancet,* June 1872, p. 774, viz., causing a tractor to adhere to the foreign body by means of glue or cement. A cherry-stone was firmly impacted in the meatus. Mr M'Leod cut a small piece of leather, attached it to a thread, and covered it with a strong cement; pressing it firmly down on to the foreign body, he waited until the cement was set, and then, by firm and steady traction, removed the fruit-stone.—Richard Neale, M.D., in the *London Medical Record,* 15th October 1880, p. 428.

Histological Changes in the Labyrinth in Hæmorrhagic Pachymeningitis (hæmatoma duræ matris).—Professor Moos, in an elaborate and exhaustive paper, gives an account of the changes found in the labyrinth in a case of this disease. Manz and Fürstner had found in the eye, either in one or both, choked disc, exactly as in tumours of the brain, and an extravasation of blood, sometimes in one, sometimes in both optic nerve sheaths. The auditory disturbances in hæmorrhagic pachymeningitis are based on hæmorrhages by diapedesis into the labyrinth which accompany the meningeal hæmorrhages, and which, by repeated attacks, may lead to total destruction of the function of hearing. The latter is caused by atrophic and degenerative processes in the labyrinth, in which both the trunk of the auditory nerve, as well as its terminal expansion, are pre-eminently involved, and in the occurrence of which the disturbances in the circulation of the blood and in the nutrition of the tissues form an important factor. The author describes most minutely and carefully his examination of both temporal bones, also giving the history of the patient (a male, G. M., forester, aged 47, an inmate of the lunatic asylum at Marburg) supplied to him by Dr Siemens. The affections of the hearing are distinctly given in the history of the case. For instance, we notice that in July 1876 he suffered from hallucinations in his hearing—heard voices calling him from above, could hear everything. On the 30th August he had the first paralytic seizure, and the day afterwards it was noticed that he heard much worse than formerly. A second paralytic attack occurred on 14th October, paralysis of the left side, speech not understood, stammering. At the beginning of November the deafness has increased. In the spring and summer of 1877 he had other two paralytic attacks. After the last, in July 1877, he appeared to have lost entirely the power of hearing. Ophthalmoscopic examination gave obliteration of the outline of the fundus on both sides, with reddening of the papilla optica (choked disc). The patient died from decubitus and marasmus on 18th August 1878. The pathological conditions found in the labyrinth are beautifully illustrated by means ot twenty-five coloured figures, and these are minutely described.—*Zeitschrift für Ohrenheilkunde*, Band. ix., Zweites Heft, p. 97.

A CASE OF PRIMARY EXTERNAL INFLAMMATION OF THE MASTOID PROCESS.—A carpenter, aged 28, after exposure to cold, was seized with pain and swelling behind the ear. When Dr Burnett first saw him the swelling was confined to that part of the temporal bone behind and somewhat above the auricle; later it spread over the whole of the mastoid process, as far as the external auditory meatus. On that account all appearances were wanting of a present or previous disease of the ear. The examination gave a normal drumhead and hearing power. Formation of pus soon took place; but as all operative interference was refused, the treatment was limited to warm applications and means for allaying the pain. After ten or twelve days the pus discharged itself by an opening in the external auditory meatus immediately behind and coming from above the posterior cartilaginous portion. At the end of a week the discharge had ceased and the disease had disappeared. Up to the time that the pus found an exit there was considerable feverishness.—Swan M. Burnett, of Washington, *Zeitschrift für Ohrenheilkunde*, Band. ix., Viertes Heft, p. 369.

ON HEREDITARY SYPHILITIC AFFECTIONS OF THE EAR.—Dr Knapp relates two cases of this disease which he considers typical:—CASE I. Keratitis parenchymatosa; otitis media catarrhalis et otitis interna heredito-syphilitica; cure. The daughter, aged 5 years, of well-to-do parents, was first seen on the 5th November 1877. She had suffered for two months previous with well-marked keratitis parenchymatosa in the right, and the disease had already begun in the left eye. She was pale, delicate, but a very lively child, with small decaying teeth. At birth she was very small, and had an eruption over the whole of her body, including the palms of her hands. The mother had two miscarriages, then the next three children at full time, but they all died within one week after birth, covered with coppery-red spots over the whole of their bodies. The father admits having had constitutional syphilis previous to his marriage, but since his recovery there has been no appearance of the disease, and he looks a healthy, vigorous man. The mother has an earthy-coloured skin. The child was under treatment for a long time with calomel in small doses, corrosive sublimate, and iodide of potassium, as well as tonics. The corneæ were very cloudy, and iritis with filiform synechiæ, which could be seen on the clearing up on the corneæ, was associated therewith. The local treatment consisted of the dropping in of atropine solution, warm fomentation, then later on mercurial ointment, wine of opium, and the dusting-in of calomel. The corneæ by-and-by became clear; nevertheless, in the course of the next three years there were several returns of the keratitis. In February 1879, eighteen months after the beginning of the eye affection, and as it was beginning to improve, suddenly the hearing power on both sides became so weak that in five days the child could not understand the loudest speech, although she could always hear the tone of the voice. This condition remained for one week, when it began to improve a little. As the mother was about to be again confined, the child was put under the immediate care of Dr Knapp, now several weeks since the commencement of the deafness. She had neither pain in the ears nor tinnitus, but headaches. Her walk was unsteady and staggering. She had repeated attacks of vertigo. She was easily made to fall, and was in constant terror of some further misfortune. Both drumheads were driven in; the left was reddened, the pharyngeal walls red and swollen. The watch was heard in the right ear $\frac{1:3}{24''}$, left $\frac{1}{80}$ by the ear and cranial bones; voice, right $\frac{5}{60'}$, left $\frac{3}{60'}$. The Eustachian tubes were pervious, but inflation of the tympana by Politzer's method made her hearing worse. The pharynx and posterior nares were treated by the application of various remedies blown upon them in the form of powder, and gargling was prescribed, whilst she took inwardly 0·12 grammes (2 grains) of iodide of potassium three times a day, besides a Turkish bath twice a week. Afterwards she took daily 0·02 grammes (one-third of a grain) of calomel daily. During the first two months her hearing was sometimes better, sometimes worse, than at the commencement of the treatment. At the beginning of the third month she had another attack of keratitis with very severe headache, vertigo, and disturbances of her equilibrium. The left drumhead appeared normal, with a bright triangular light reflex; right reddened. In the naso-pharyngeal cavity there was an excessive mucous secretion. Voice was heard at $\frac{8}{60'}$, and after applying Politzer's method of inflating the tympana was increased to $\frac{20}{60'}$.

From this time forward a more or less constant improvement set in. By the end of May the pharynx and drumheads were normal, the light reflexes bright and regularly formed. Still the hearing ver for the voice was barely for the right $\frac{20}{60'}$, and for the left $\frac{10}{60'}$.

By the end of June the hearing power of speech had become normal. She spent the summer by the sea-coast, at Long Branch, where she had a return of the keratitis, but not the otitis.

By a thorough examination made on the 5th February 1880, one year from the commencement of the aural affection,—the patient had suffered again from another mild attack of pharyngeal catarrh in the meantime,—the right drumhead was found transparent in its anterior and inferior segment, driven in, the annulus tendinosus distinctly marked, the light reflex divided, only glancing at its apex: by suction and Politzer's method of inflation it became normal. The membrana tympani was movable as seen by Siegle's speculum. The left drumhead was quite normal, its light reflex clear and triangular; hearing power, voice $\frac{12'}{24'}$, for the whispered voice $\frac{20'}{20'}$, in both ears. By the last examination, in May 1880, the hearing power was normal and the pharyngeal catarrh had disappeared, and she had suffered from no further troubles from her ears.

This case, according to Dr Knapp, gives us a clear and complete picture of a case of hereditary syphilitic affection of the ear. From the history there could not be the slightest doubt about the etiology. The time of its appearance was earlier than usual, which is generally about the time of puberty or later.

CASE II.—Keratitis parenchymatosa; otitis media catarrhalis et otitis interna heredito-syphilitica; cure of the inflammatory affection, a high degree of deafness remaining. Mrs G. S., 23 years of age, consulted Dr Knapp in May 1878. When she was 5 years of age she lost her mother from consumption, and her father, who had a "secret disease," from dropsy, both in the same year. There were other three sickly children born to her parents, but they all died shortly after their birth. She herself was healthy until her seventeenth year, when first the one eye, then the other, became affected. The disease in her eyes continued for two years, and the diagnosis of keratitis parenchymatosa can without hesitation be made, as well from her description as from the remaining diffuse in the centre most intense cloudiness of the corneæ. Whilst she suffered from her eyes she had now and then attacks of headache, noises in her ears, inclination to vomit, giddiness, and an unsteady gait, as if she were drunken. At times, to prevent herself from falling, she had to support herself by laying hold of the street lamps. From the first attack her hearing became affected, and became constantly worse in the course of eight months during which she had these attacks. Subsequently attacks of nausea and vomiting set in. When she consulted Dr Knapp, he found the colour of the skin pale and earth-coloured, the incisor teeth with tortuous edges and irregular, the corneæ cloudy, as mentioned above, the mucous membrane of the pharynx somewhat reddened and swollen. Hearing power with watch—right $= \frac{1}{\infty}$, left $= 0$. Voice—right $\frac{10}{60}$; left $\frac{1}{60}$. The membrana tympani driven in, dull; the Eustachian tubes pervious. She was ordered to take calomel 0·005 (gr. $\frac{1}{12}$) three times a day. She attended very irregularly.

On the 6th February 1880 the following conditions were observed. Her general condition was improved; the watch was heard in the right $\frac{1}{60}$, left 0; no conduction of sound to the ear through the bones of the head; Politzer's hammer was heard by the right ear $\frac{1}{60}$, in the left it was not heard at all; and from the bones of the head generally it was heard better in the right ear than the left. The tuning-fork was only heard in front of the right ear, not at all from the bones of the cranium, but from the teeth quite well in the right ear, scarcely in the left. Voice in the right was heard at $\frac{5}{60}$; left $\frac{1:3}{60}$. With the speaking-trumpet a whisper was heard in the right, in the left loud speech. With the audiphone the voice was heard at $\frac{5}{60}$, with the hearing-tube at $\frac{15}{60}$. By Politzer's method the air entered the tympana in a full stream, as could be distinctly heard by the diagnostic tube; the power of hearing was not, however, increased thereby. Both drumheads are very obliquely placed, the malleus handle being straight up and down. Light reflex small. The drumhead is of a milky colour at its periphery, normal in the centre. Its mobility with Siegle's speculum is complete; pharynx normal. This condition was found the same at the patient's last visit in May 1880, notwithstanding that the patient had gone on for months taking mercury and iodide of potassium.

This case is essentially similar to the former. The deafness appears not to have developed so rapidly. During the last two years the hearing power for the voice was diminished from $\frac{10}{60}$ to $\frac{5}{60}$ on the right side, to almost complete deafness on the left. The symptoms were those of slight catarrh of the middle ear, with decided affection of the labyrinth. The patient was poor, and dwelt amongst distinctly unfavourable outward circumstances. When we compare the unfortunate result in this case with the highly favourable one in the former—the child of wealthy parents—it bears out Hinton's statement (*Questions of Aural Surgery*, p. 291), to the effect that the disease is more tractable in patients in good circumstances. "Among the poor, who are exposed to hardships and overwork, I have found the affection practically unrelievable; but when it occurs among the wealthier classes, not only do its symptoms appear less severe, but I have frequently found decided amendment ensue. I have no settled plan of treatment, but have found injecting warm iodine vapour into the tympanum, among other things, seem to answer well. The treatment should be continued for a long time, with intermissions." In cases of inherited syphilitic keratitis parenchymatosa we generally obtain very satisfactory results, much better than in the accompanying ear affection. This may perhaps be accounted for from the fact that eye patients in general receive more care, attention, and constant skilled medical treatment than ear patients. The above two cases Dr Knapp considers typical of heredito-syphilitic affections of the ear; and, from his observations in these as well as other cases of the same disease, he states that he has always observed that the middle ear and the labyrinth are invariably affected simultaneously, the latter much more severely.

[I am inclined to think, from observing several cases, that the pharynx and middle ear are affected for a considerable length of time before the disease attacks the labyrinth. I have one case under treatment at the present time, where the patient was being treated for months previously with pharyngitis granulosa and otitis media catarrhalis chronica, with repeated accumulations of wax in both external auditory passages. The labyrinthine affection came on suddenly and completely in one night. This case in a working lad, after years of treatment, is now showing signs of returning hearing power. I would also here draw attention to Roosa's remarks in regard to causes of inspissated cerumen, in the first edition of his work, p. 149. Since reading his book, on its first appearance, my observations lead me to conclude that seldom if ever is inspissated cerumen a purely local affection. For instance, how frequently we see chronic catarrh of the middle ear and pharynx associated, may be in an extremely mild degree in regard to the catarrh interfering with the hearing power. However great and satisfactory the relief we may give by removing inspissated cerumen, we ought to make a further examination of our patient's organ of hearing in all cases of wax in the ear.—J. J. K. D.]—H. Knapp, of New York, *Zeitschrift für Ohrenheilkunde*, Band. ix., Viertes Heft, p. 349.

A CASE OF RUPTURE OF THE DRUMHEAD FROM A BOX ON THE EAR; RAPID AND COMPLETE RECOVERY.—Theodor Lüders, 16 years of age, born in Missouri, of healthy parents, received two hours previously, through a dispute he had with a fellow-student, a sharp blow on his left ear, from which he staggered, fell, and for a short time lost consciousness. When he had recovered sensation and consciousness he complained of severe pain deep in his left ear, loud roaring noises, difficulty of hearing, staggering gait, slight nausea, and faintness.

Status præsens.—Patient was compelled, during Dr Dills' examination, to sit down. His countenance was pale, pained, and anxious. He heard the watch with his right ear at a distance of eight feet, the normal hearing distance of watch; with the left ear it was only heard at a distance of 18 in.

On examination with the otoscope no change was found in the right ear. In the left drumhead there could be seen a flat, straight tear or fissure, 6 mm., in length, running horizontally, the centre of which is 2 mm. below the lower end of the manubrium. By the Valsalvian method a small drop of bloody serum was forced through the centre of the wound. The edges of the wound lay in close apposition to one another, and there was nothing else to be seen but the dark thread-like fissure.

The tonsils were hypertrophied, with deep, rugged excavations. The posterior wall of the pharynx was strewed with enlarged follicles, and covered with a thick coating of muco-purulent masses. The patient, in answer to Dr Dills, stated that he had previously suffered from his ears; at least he had had a difficulty in hearing. As he had an attack of measles three months since, he dated the trouble with his throat from then. He was ordered rest and quietness. Three days later the chief subjective symptoms had disappeared. The hearing distance $= \frac{4}{8}$. The fissure in the drumhead was completely healed. On the 12th May all the subjective symptoms had disappeared. The patient thinks he hears as well with the left ear as with the right ear. The hearing distance is, left $= \frac{7}{8}$, right $= \frac{8}{8}$. The left drumhead is distinctly driven in. Where before the fissure existed there is a tight cicatrix stretching irregularly upwards and downwards. By examination with the catheter and Politzer's method the Eustachian tubes are found to be pervious and free from abnormal secretion. On a more careful examination of the drumhead Dr Dills observed, what he had on his first and hurried examination overlooked, an increased concavity of the whole membrane, with apparent shortening of the handle of the malleus and increased prominence of the short process. Any change in the colour of the membrane was not distinguished.—Thos. J. Dills, *Zeitschrift für Ohrenheilkunde*, Band. ix., p. 367.

OCCASIONAL PERISCOPE OF DERMATOLOGY.

By W. ALLAN JAMIESON, M.D., F.R.C.P., Lecturer on Diseases of the Skin, Edinburgh School of Medicine.

HERPES PROGENITALIS.—Greenough, struck with the scanty notices of this affection found in most works on cutaneous diseases, has set himself to clear up some doubtful points regarding it from his own pretty extensive experience. He considers the disease a tolerably common one, apparently much more so in private than in hospital or dispensary practice. This may, however, be partly explained by the carelessness of the latter class of patients. He prefers the name progenitalis to preputialis, as the group of vesicles may occur on any part of the penis. Though authors say it may be met with in females, its occurrence in them is certainly rare, though Hebra in his Atlas figures such. It is an affection of youth and early middle age, the author never having seen it after the age of forty. As to the cause of the disease, Greenough feels pretty confident that any one who consulted him for regular relapsing herpes progenitalis must have previously had some form of venereal disease, either chancroid, syphilis, or gonorrhœa. It is oftener seen in cases where the prepuce is long than where it is either naturally short or has been removed. A tender condition of the parts would seem a predisposing cause, since the tendency to herpetic relapses is outgrown as the patients become older and tougher. Sexual intercourse seems to be an exciting cause, since many patients have an outbreak after every coitus. Evidence of a satisfactory nature is brought forward to prove that herpes progenitalis is quite distinct from herpes febrilis on the one hand and herpes zoster on the other. Herpes zoster *may* affect the penis, but in herpes progenitalis the neuralgic pains which precede and follow zoster are absent. The groups of vesicles are arranged transversely to the nerve trunks, instead of parallel to their course, as in zoster, while the numerous recurrences of herpes progenitalis are never seen in zoster. In the matter of treatment, lead lotions, dusting with calomel, or, should the abrasions become indolent, the use of iodoform in powder, or as an ointment with vaseline and balsam of Peru, are all that is necessary for the lesions themselves. To prevent relapses Greenough recommends—1st, scrupulous cleanliness; 2d, the constant employment of an astringent wash, as of sulphate of zinc, tannic acid, or carbolic acid; 3d, in severe cases, circumcision, those who have submitted to this having, in his experience, rarely more than an attack or two afterwards. Dr Hyde of Chicago, and Dr Taylor of New York, however, express an opinion contrary to his on this latter point, as they have treated cases among Israelites, and the disease had recurred after the operation much as before.—*Archives of Dermatology*, January 1881.

ECZEMA PALMARE.—Dr Finny continues his excellent "Practical Notes on some Local Forms of Eczema," and deals now with that affecting the palm. He agrees with those who believe that scaly diseases of the palm may be due either to eczema, psoriasis, or syphilis, and the diagnosis is at times by no means easy. It occurs, though by no means common, usually in persons over thirty, and more frequently in men. Irritating occupations seem to induce it, as digging, bottle-washing, etc. Sometimes no local cause is discoverable, and then it may be the expression of a gouty diathesis brought out by worry and anxiety. The whole palm may be involved, or but part, then more often confined to the ball of the thumb and adjoining natural folds. It may be found on both hands, but if so, one palm is more extensively and deeply engaged than the other. The epidermis becomes dry, cracked, fissured, and scaly, and more or less thickened. Any extension of the hand tears open the fissures and causes much pain. Accompanying this there is burning, tingling, or itching of a very severe character, and this, being worst in the evening, prevents sleep, and renders the patient haggard and nervous. In diagnosis, since in many instances history fails us, syphilis must be eliminated by other means. Such are the "coppery" hue of the eruption, the "earthy" tint of the complexion, absence as a rule of tingling and itching, so common in eczema. The syphilitic eruption, too, starts usually from a centre, spreads circumferentially, and may heal in the centre. In treatment some cases improve under the constant use of indiarubber gloves, followed up by an ointment of ammoniated mercury, 20 grains to the ounce. The oleate of zinc diluted with vaseline answers best in moderately chronic cases where the thickening is not extreme. Where treatment threatens to be tedious owing to the extreme density of the tissues, or when constant applications of ointments or indiarubber gloves are impracticable, a more rapid solution of the thickened epidermis is necessary prior to using curative ointments. The best solvent is potash, which may be employed as a lotion, applied on lint under gutta-percha, in the strength of 2 to 4 drachms of liq. potassæ in 8 ounces of water. Care must be taken not to overreach the object in view. During any treatment the hand should be kept flexed, to avoid tearing open the fissures which are in process of healing.—*Dublin Journal of Medical Science*, January 1881.

COMPLETE AND UNIVERSAL ALOPECIA FOLLOWING FRIGHT.—Total baldness coming on rapidly is usually the result of severe fevers, and is followed by entire restoration to the normal condition. A case of Frédet is cited, however, which may perhaps be regarded as an unique one. A healthy Italian blonde, aged 17, lymphatic, with exceptionally profuse hair, was sewing at her window. Suddenly the floor fell in, leaving her only time to catch hold of the window frame, where she hung till taken down by means of a ladder. No subsequent loss of consciousness nor nervous excitement through the day. At night headache, chills, and bad dreams. In the morning nervous excitement, weakness at the knees, spasms of the fingers, and great itching of the scalp. The following day she felt better, only the itching of the scalp remaining. But on arranging her hair, whole tufts came out at the roots, adhering to her comb. In three days not a single hair was left on the scalp. Eyebrows, eyelids, axillæ, and genitals began to lose their hair the day after the falling began from the scalp, and in five days these regions were devoid of hair. General health good, and no functional disturbance of any kind. A month after, not a hair remained on the body, though a lens was used in the search. Mentally the patient had become despondent, fearing non-recovery of her hair; this, two years later, had not returned.—*Allg. Med. Central Zeitung*, March 6, 1880; and *Boston Med. and Surg. Journal*, Oct. 21, 1880.

THE ANATOMICAL SEAT OF THE FUNGUS IN TINEA TONSURANS CAPILLITIIS.—Dr Robinson, whose valuable researches on sycosis and psoriasis are well known, has turned his attention to ringworm of the head. While in all forms of ringworm the fungus is the same, it is the anatomical character of the affected part, and the irritability of its histological elements, which produce the different pathological conditions in different cases. According to Drs Thin and Taylor, the fungus is never present, and actually cannot exist,

among living animal tissues, but lives upon effete epidermic structures. In kerion, however, Majocchi found the fungus within the hair follicle, along the hair-shaft, and also in the connective tissue around the follicle. Robinson, from observations made at intervals during the last two years, has found spores in the corneous layer, in the rete Malpighi, in the corium, and even in the subcutaneous tissue. Sometimes short mycelial threads were found in the rete. Fungi were found in all parts of the hair situated within the skin, but the greatest number were present in that part above the neck of the follicle. They were also observed in the root of the hair. Probably in those cases in which a large number of hairs fall out entire the fungus extends deeper than in those cases of only stubbed hair. The deep seat of the fungus in some cases is very likely the cause of the occasional obstinacy of the disease and difficulty of cure. The paper is illustrated by some admirable microscopic drawings.—*New York Medical Journal*, March 1881.

TREATMENT OF ECZEMA OF THE HANDS AND FACE.—Bulkley contributes some good practical hints. The active local measures recommended by Hebra are just now the subject of adverse criticism; and in chronic eczema of the backs of the hands and knuckles Bulkley finds that the application of caustic potash in solution, ten to thirty grains to the ounce, quickly rubbed in and followed by a soothing ointment, of the greatest service, and to agree better in many cases than the sp. saponatus kelinus. He, however, cites a case where an interesting result followed the energetic use of the soap treatment. A plasterer had eczema of the backs of the hands, with much thickening, due to his occupation. Caustic potash failed, but thorough frictions with soft soap so effectually removed the eczema, that though eczema has since then, ten years ago, frequently attacked other parts of his hands, the portions thus treated with soap have always remained soft, supple, and well. Immersion of the palms alone in very hot water, when the obstinate form which attacks them is present, followed by the application of diachylon ointment spread on muslin and closely applied, is advocated. Should the occupation render the continuance of this during the day impossible, a dilute lotion of glycerole of subacetate of lead, with a little glycerine, should be well rubbed in several times a day, particularly after washing the hands. Wearing indiarubber gloves does not lead, in his experience, to such permanent results as other measures. In one case of the nails which had resisted other treatment for years, a cure was effected by the use of an ointment of a drachm of liquor ferri per sulphatis to the ounce. In eczema of the hairy parts of the face, when mild and of the pustular variety, he has commonly succeeded in removing the disease by keeping the hairs clipped short with scissors, and having the ointment, usually calamine and zinc, thoroughly applied with as little friction as possible.—*Archives of Dermatology*, January 1881.

PERISCOPE OF OPHTHALMOLOGY.

By GEORGE A. BERRY, M.B.

AN IMPROVED OPERATION FOR A NEW PUPIL AFTER CATARACT OPERATION (Loring, *Transactions of the American Ophthalmological Society*, 1880).—The opening of the pupillary space which has become closed through inflammatory processes following an operation for cataract involves frequently a considerable amount of danger when performed in the usual way by means of Wecker's scissors. Not only, owing to the necessarily large size of the opening in the cornea, is there apt to be a considerable escape of vitreous, but the opening formed in the iris is extremely liable to close again after some time. The author believes that less risk is run, and at the same time a better result obtained, by operating in the following manner:—A large free transverse section of the iris and all underlying membranes is made by means of a knife sufficiently narrow to enable it to be turned on itself in the wound, at right angles, when necessary, to the position given it in making the puncture of the cornea. The knife is entered at the sclero-corneal junction, at the outer circumference if the cut is to be horizontal, and at the lower if it is intended to make it vertical. "It is then carried completely across the anterior chamber, precisely as if a counter-puncture were to be made, until the point arrives at the peripheral portion of the major arch of the iris. The section is then performed by suddenly depressing the point of the knife with a bold free movement of the hand, until the handle of the knife, from being horizontal, assumes a vertical position. Nor should the operator be content with this movement alone, but supplement it, while the point of the knife is still deep in the vitreous, with a gentle swing movement while the knife is being withdrawn." The success of this operation depends on the thorough division of all the fibres of the iris. If an attempt be made to depress the knife on the flat, a portion of the iris is apt to be torn from its attachments, the rest being only folded back, so that it is liable to return to its position as soon as the knife is withdrawn. "The turning of the knife wrinkles up the cornea to a certain degree, but, notwithstanding this, the rotation should be thoroughly performed." Generally, the hæmorrhage following this operation is sufficient to fill the pupillary space, so that an immediate improvement in vision is not to be expected, but we are told that "sooner or later a marked improvement almost invariably takes place, provided the sensation of splitting of the tissues under the knife is followed by the appearance of a black pupillary space." When the occluding membrane is exceptionally dense, a second instrument may be used to support the iris, so as to prevent its being torn away from its attachments. An ordinary stop-needle passed vertically through the periphery of the cornea and transfixing the iris is all that is absolutely necessary; but to prevent the iris gliding down the needle, Loring makes use of a small curved stop-needle. The advantages claimed for this method of operating are, the little violence done to the eye, the absence of any escape of vitreous, the rapid closing of the wound, its harmlessness and rapidity.

SPINAL MYOSIS AND REFLEX PUPILLARY IMMOBILITY.—Erb has again collected, since his last paper on the subject in 1879, 84 cases of typical tabes dorsalis in all stages of the disease. In order to avoid confusing accidental accommodative movements with contraction of the pupils, the reaction to light should not be tested by opening and closing the lids, but by inspecting the pupils whilst the eyes are alternately shaded and illuminated; this is best done with artificial light condensed by means of a convex lens. Of the 84 cases, 59 showed complete reflex immobility, 12 partial. Of these 71 cases, the immobility was unilateral in 3, and existed along with optic atrophy in 7. In only 37 was there decided myosis, whilst in 34 the pupils were normal in size, though somewhat unequal. Myosis thus appears to fail in about one-half of the cases of reflex immobility. This symptom itself may be completely absent during the whole course of the disease. There appears to exist no close causal connexion between syphilis and reflex pupillary immobility. The author has recently been able to demonstrate "the existence of exquisite myosis, with reflex pupillary immobility, in patients not affected with tabes or progressive paralysis," but remarks, "That the patients will not develop tabes later, who will dare to say?" He is able to confirm the statement of Hempel, that in uncomplicated senile myosis the reflex reaction of the pupils to light is preserved. A pathologico-psychological explanation of myosis and reflex pupillary immobility, either occurring together or separately, is given by the author, and is well worthy of study, though it would be impossible to do justice to it in a short abstract. Some experiments are also described, which show that in tabes there is not only an abolition of reflex contraction of the pupils, but often of their reflex dilatation, and it is this circumstance which has led the author to adopt the title of reflex pupillary immobility.—*Archives of Medicine*, Vol. iv., No. 2.

CASE OF BUPHTHALMUS WITH CENTRAL ANTERIOR SYNECHIA CURED BY TOTAL REMOVAL OF THE IRIS.—A boy, aged 7, who several years previously had punctured the left eye with a pair of scissors, came to Dr Noyes of New York with the anterior half of the globe, including the whole ciliary region, very much enlarged. The ciliary region was stretched to a bluish zone, and the cornea projecting in a globular form, thinned, and semi-opaque. The iris pressed up against the inner surface of the cornea over its whole extent, and adherent to its middle, the pupil being totally adherent to the cornea. T + 1; no tenderness. His parents were anxious to have everything done for the relief of the deformity, and it was determined to attempt removal of the whole iris. This was done by making an incision about 4 mm. long with the point of a Græfe's knife, near the origin of the iris, and passing a small sharp hook, pressed between the iris and cornea, across to the opposite side of the chamber, and then entangling the iris at that point. Rotating it well on itself, a good hold of the iris was secured and strong traction succeeded in loosening it from its peripheral margin. Only very slight bleeding followed the operation, and the patient was discharged on the fourteenth day with the eye healed, barely any irritation, and the staphyloma much reduced. About three months afterwards the globe was rather less than normal size, and of normal tension. The cornea was contracted, flattened, and densely opaque; the ciliary region normal in appearance, and no tenderness. The interesting result of this procedure affords strong evidence in support of the prevailing theories as to the rôle played by the angle of the anterior chamber in affording an exit for the intraocular fluids.—*Trans. of Americ. Oph. Soc.*

AN INSTRUMENT FOR MEASURING PRACTICALLY THE CURVATURE OF THE CORNEA (*Trans. of Americ. Ophth. Soc.*).—Loring has given the name of keratometer to an arrangement of a number of plano-convex lenses of varying degrees of curvature on a disc, the reflected images from which can be compared in size with those formed by the cornea from the same objects. The curvature of these lenses corresponds to the possible variations in curvature met with in the corneæ of different eyes. Any object may be taken from which to get a reflected image from the corneæ: a window is perhaps the most convenient; and as the image should be pretty large, so as to render slight differences in size more appreciable, the person observed should sit not farther than from 6 to 8 feet from it, and direct his gaze so that the image of the window frame shall fall upon the centre of his cornea. The image formed on the glass lens held close to the eye is compared with that of the cornea, and the lens selected which gives the same size of image. The author maintains that this can be done with sufficient accuracy to estimate the difference in diameter of the cornea not greater than $\frac{1}{8}$ of a mm., and the instrument has, in his hands, proved to be of more than physiological value.

SYMPATHETIC INFLAMMATION FOLLOWING OPERATIONS FOR CATARACT (*Trans. of Americ. Ophth. Soc.*).—Dr Webster of New York, though admitting the rarity of sympathetic inflammation of one eye following extraction of cataract in the other, considers, nevertheless, that "the possibility of such a result is the strongest argument that can be adduced against operating on one eye whilst there is yet useful vision in the fellow eye." He has had 11 cases in which this inflammation occurred, the results of which were as follows:—In 4 both eyes were lost; in 1 the first eye alone, although the other was severely damaged; in 1 the eye operated on was lost, and the sympathetically inflamed one recovered; in another the first eye recovered with a drawn up pupil, and the other one only suffered slight damage; in 3 cases both recovered in good condition; in 1 the sympathetically inflamed one was lost whilst the eye operated on retained good vision.

KERATITIS FROM MALARIAL FEVER (*Trans. of Americ. Ophth. Soc.*).—This form of keratitis, which is generally considered to occur but rarely now, is found by Kipp to be common enough in New Jersey. It generally is developed within a few days of the attack of intermittent fever, simultaneously with herpetic vesicles on the nose or lips. In some cases it is observed to follow every attack of the fever. Only one eye is affected as a rule. On the first symptoms of irritation complained of by the patient, a disturbance of the corneal epithelium, generally linear in its disposition, is observed, accompanied by pericorneal injection. The middle portion of the opacity thus resulting is on the following day transformed into a shallow ulcer, which may or may not spread, according to the severity of the case. Reparation is slow, occupying two to four months. There is supra-orbital neuralgia, but no corneal anæsthesia.

EXTRACTION OF CATARACT IN MICROPHTHALMUS.—The following case, which came under the observation of Prof. Ravà of Sassari (*Annali di Ottalmologia*, vol. ix.), is interesting as an instance of hereditary microphthalmus. The patient, a peasant woman of 50, had been for a year gradually losing the sight of both eyes from cataract. Previous to that time she had been able to thread a needle, sew, and attend to all her domestic duties without having recourse to spectacles. The eyeballs were not more than two-thirds of the normal size, and the greatest diameter of the corneæ, which were perfectly transparent, 7 mm. All the membranes of the eye, as far as could be seen, were perfectly normal, the tension normal, and light-perception good. One of her sisters and her mother had similar eyes, and both were affected with cataract when they reached the age of 50. The mother had been operated on successfully. Two of her sons were seen by Ravà, and were found to be also microphthalmic, but the one, aged 13, had coloboma of the iris and somewhat imperfect vision, and the other, aged 18, marked nystagmus, very defective vision, and considerable deafness. The extraction was performed with the greatest care, owing to the lens being proportionally small, but the section was made downwards, as the eye was too deep set to make the upper section possible. The patient eventually obtained excellent vision.

THE NERVES OF THE IRIS.—Fürst (*Nordiskt Medicinskt Arkiv*, xii. 3) has studied the arrangement of nerve fibrils in the iris in albino rabbits. The preparations were made with perosmic acid and chloride of gold. Before entering the iris, the ciliary nerves generally form a plexus at the outer border of the ciliary body. The iris may be divided into three circular zones. The first and external lies between the ciliary border and the circulus arteriosus; the second reaches to the external border of the sphincter; and the third, or sphincter zone, to the border of the pupil. The middle zone possesses frequently two circular plexuses, of which the internal is the most constant. The nerve trunks advance towards the pupil, diminishing simultaneously in size and in the number furnished with myelin sheaths: only a very few of them enter the extero-posterior portion of the sphincter. The author has been able to confirm the existence of a characteristic plexus observed by Meyer in the sphincter, as well as of the fine network of fibrils covering the anterior surface of the iris. He also gives drawings of the nervous supply to the bloodvessels, which appears to be very rich indeed; the ciliary processes are also extremely rich in nerve supply. He found no ganglion cells in the iris, or any difference which could possibly be made out between sensitive and motor fibrils. Even the capillaries (in which a muscular coat is absent) are surrounded by a nervous network.

THE FUNCTIONS OF THE RETINA.—Landolt (*Archives d'Ophthalmologie*, vol. i. 3) gives a *résumé* of the result of his own investigations on the function of the retina compared with those of others. In different pathological conditions the light sense, colour sense, and form sense, which have to be distinguished as separate functions, may be equally or unequally diminished, and it is because this is not sufficiently appreciated that so much indefiniteness is introduced into reports of cases. He finds as a normal condition that the light sense is equally acute over the whole retina, *i.e.*, over the whole portion of the retina which is sensitive at all to light; that the perception of colours, though present up to the same limits, rapidly decreases its acuteness from the centre towards the periphery; whilst the form sense decreases to a still greater extent in the same direction. Thus if the vision of the centre be taken = 1, that of two excentric points, distant 2° 23′ and 11° 12′, are given in the following table, where L, C, V stand for light, colour, and form sense (visual acuity) respectively:—

	Centre.	2° 23′	11° 12′
L	1	1	1
C	1	0·5	0·16
V	1	0·33	0·07

ON THE DURATION OF THE ACCOMMODATIVE ACT OF THE LENS.—Angelucci (*Annali di Ottalmologia*, vol. ix.) has measured the time occupied by the lens in altering its curvature during the act of accommodation. This he did by observing the change in position of a reflected image from the anterior capsule consequent on the alteration of curvature. A microscope arrangement was used to render the deflection more marked. It was found that the time occupied by the lens in altering its curvature was as nearly as possible the same whether the accommodation passed from that necessary for a near object to that for a distance or *vice versa*. This was not found to be the case with the time occupied in what he calls subjective accommodation, that is, the time which elapses between the consciousness of two distinct images in passing from one state of accommodation to the other. In this case the author was able to confirm the statements of previous experimenters (Vierordt, Aeby), that a greater time elapses in becoming conscious of the change passing from accommodation for a distance to that for a near object than in the opposite direction. Further, the lenticular change is effected in little more than a third of the time occupied by the subjective accommodation. In the case of the pupil the time occupied in the alteration of size is much the same in both acts of accommodation, and approaches more nearly to the subjective time. According to the author, this fact renders probable a difference of innervation of the ciliary body and iris. Although these experiments appear to have been carefully performed, and due regard paid to the personal equation entailed in the calculation of the time, it would appear improbable that the exact time at which an alteration in the curvature of the lens began and ended could be observed with any degree of certainty. Further, it does not necessarily follow that such alteration should be exactly contemporaneous with the initial contraction in the ciliary muscle. The facts as observed are, however, interesting, and the fact of the experiments having to a great extent been made in conjunction with Prof. Aubert of Rostock is a sufficient guarantee for their trustworthiness.

Part Fifth.

MEDICAL NEWS.

UNIVERSITY OF EDINBURGH—DEGREES IN MEDICINE.—The following is a list of candidates who have passed the second professional examination, April 1881:—F. Ashwell, T. R. Bailey, G. J. H. Bell, J. S. Bolton, J. R. H. Bond, C. H. Burneo, John Bowie, A. S. Bowman, William Brydon, W. A. Buchan, George Burn Murdoch, P. B. Bury, W. H. Calvert, S. G. Campbell (with distinction), A. K. Christie (with distinction), Philip Cockburn, P. B. Cousland, John Craig, William Davidson, D. R. Davies, A. S. Delépine (with distinction), C. V. Delépine (with distinction), R. G. Dempster, William Dutton, A. B. Dymock, H. J. Fletcher, J. M. Ferguson, B. E. Fordyce, T. A. Fraser (with distinction), G. W. Galletly, Lawson Gifford, F. W. Grierson, C. B. Gunn, G. F. Gutheridge, M. W. Gutteridge, W. W. Hall, H. C. Hallows, F. H. Hawkins, T. K. Hill, A. P. Hillier, Richard Humphreys, William Hunter (with distinction), Granville Jameson, A. C. Keep, Arthur King, P. B. Le Franc, R. T. Lorraine, W. B. M'Donald (with distinction), A. F. Mackenzie, W. G. Macpherson, Robert Mackinlay (with distinction), E. O. Macniven, F. P. Marais, Rivis Mead, A. J. K. M. Mill, J. R. Nash, A. M. Neethling, G. R. Nelson, E. F. Neve, Diarmid Noel-Paton (with distinction), E. S. Palmer, R. W. Philip, G. C. Purvis (with distinction), Herbt. Rendall, G. J. Renwick, R. H. Rozenzweig, T. L. Shearer, G. F. Shiels, David Smart (with distinction), G. A. van Someren, A. E. C. Spence, William Spence, Alexander Stables, Joseph Stapleton, J. N. Stark, Charles Stein, R. T. Sutherland, J. R. Suzor, William Taylor, A. H. Thomas, W. F. Thompson, P. E. Todd, David Treharne, J. A. Turner, W. O. Walker, H. F. Watkins (with distinction), John Whitaker, J. M. Whyte, Ernest Wilcox, M. M. Wilson, Thomas Wood, William Younan.

OBITUARY.

WILLIAM CRICHTON SAUNDERS, L.R.C.S.E., DUNDEE.

THIS well-known and much esteemed medical practitioner died on the 25th April at Broughty Ferry, where he had resided since failing health compelled him, about two years ago, to resign his public appointments and to retire from the practice of his profession in Dundee, his native town.

Mr Saunders, who belonged to an old Dundee family, was born on the 12th April 1809, and educated at the Grammar School of Dundee and at the High School of Edinburgh. On completing his preliminary education he was apprenticed to his grand-uncle, Mr John Crichton, surgeon, Dundee, the celebrated lithotomist, and on the termination of his apprenticeship studied at the Medical School of Edinburgh, and became a licentiate of the Royal College of Surgeons of Edinburgh on 30th January 1830.

After obtaining his surgeon's diploma he spent two years in study at Paris and Montpellier, attending the lectures of Dupuytren and the other celebrities of the French schools, and, being in Paris during the Revolution of July 1830,—"the three days,"—gave assistance to the wounded at the barricades and in hospital.

He returned to Dundee to begin practice in 1832, during the first outbreak of cholera, and distinguished himself by his devoted attention to the patients in the cholera hospital.

For nearly half a century Mr Saunders enjoyed an extensive practice among all classes in Dundee and the surrounding neighbourhood, and endeared himself to a wide circle by his skill in alleviating suffering, his kindly sympathy, and his unostentatious benevolence. He held for many years the appointments of Certifying Surgeon under the Factories Acts and Admiralty Surgeon, and had medical charge of the troops stationed at Dudhope Barracks.

Mr Saunders was a man of highly cultivated tastes and polished manners, an accurate scholar, and an accomplished modern linguist.

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